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MEMORANDUM

Date: November 27, 2019

To: Council

From: José Montañez and Jessica Coakley, Staff

Subject: Atlantic Surfclam and Ocean Quahog (SCOQ) Excessive Shares Amendment – Final Action

At the December Council meeting, the Council will review the public hearing comments and the SCOQ Committee and staff recommendations. The Council will select preferred alternatives and take final action at this meeting. The following documents are available for Council consideration on this subject (note: documents listed in italics are available only in the online version of the briefing book at http://www.mafmc.org/briefing/december-2019):

1. *Excessive Shares Amendment (Draft as of November 19, 2019).*
2. SCOQ Excessive Shares Amendment - Staff Recommendations memo dated November 25, 2019.
3. *Additional Written Comments Received (as of November 27, 2019).*
4. Summary of all Comments (received between August 1 and September 14, 2019).
5. *Public Hearings Meeting Summaries (August 1,7 and September 9-10, 2019).*
6. *Written Comments (received between August 1 and September 14, 2019).*

The following document will be posted on the meeting page as a supplemental item under Tab 5 when it becomes available:

- Summary of the December 2, 2019 SCOQ Committee Meeting

EXCESSIVE SHARES AMENDMENT TO THE ATLANTIC SURFCLAM AND OCEAN QUAHOG FISHERY MANAGEMENT PLAN

(Includes Draft Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis)

DRAFT AS OF 11/19/2019

Mid-Atlantic Fishery Management Council

in cooperation with

the National Marine Fisheries Service (NMFS)

Draft adopted by MAFMC: 06-04-2019
Final adopted by MAFMC: MM-DD-YYYY
Draft submitted to NOAA: MM-DD-YYYY
Final approved by NOAA: MM-DD-YYYY

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1.0 EXECUTIVE SUMMARY

This document was prepared by the Mid-Atlantic Fishery Management Council (MAFMC or Council) in consultation with the National Oceanic and Atmospheric Administrations (NOAA) National Marine Fisheries Service (NMFS). This document was developed in accordance with all applicable laws and statutes described in section 8.0.

The purpose of this action (amendment)[1] is to consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog individual transferrable quota (ITQ) privileges. For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap level that is intended to prevent a firm or entity from exerting market power.[2] The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

This action includes measures to revise the process for specifying multi-year management measures, to require periodic review of the excessive shares measures, and allow adjustments to be made under the frameworkable provisions of the FMP. In addition, this amendment considers revisions to some or all of the current management objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP).

1.1 Summary of Alternatives

This document details management alternatives being considered and their expected impacts on several components of the environment. The alternatives are summarized in Boxes ES-1 to ES-4 below, and described in more detail in sections 5.1 to 5.5.

[1] Amendment number to be added after final action.

[2] An outcome of obtaining market power could be pricing power in either output (product) or input (factor) markets or the ability to disrupt other firms or entities from participating in the market.

Box ES-1. Summary of the excessive shares cap alternatives. ***The Council needs to choose a specific model and affiliation level to implement and/or monitor any particular excessive shares cap level.***

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No limit or definition of an excessive share is included in the FMP.
Alternative 2: Single Cap – Quota share ownership cap-only, with unlimited possession of cage tags allowed during the fishing year	A single cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership[3] with unlimited possession of cage tags allowed during the fishing year (Note: all excessive share alternatives are applicable throughout the year). Since the cap is based on ownership-only, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit.
Sub-Alternative 2.1: Quota share ownership cap based on highest level in the ownership data, 2016-2017	The single quota share caps would be based on the highest level of quota share held by an individual or entity reported in the ownership data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species. If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in this fishery (i.e., 28%, 28%, 28%, and 16%) and a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in this fishery (i.e., 22%, 22%, 22%, 22%, and 12%), regardless of model or affiliation level used.
Sub-Alternative 2.2: Quota share ownership cap at 49%	The single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share and transfer/leasing of quota share allocation within the fishing year. A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).
Sub-Alternative 2.3: Quota share ownership cap at 95%	The single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative was recommended for inclusion by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). A 95% cap could potentially result in a minimum (if fully consolidated) of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%).
Alternative 3: Cap – applies to possession of both owned quota share and cage tags	A percent cap based on the possession of both owned quota share and cage tags by an individual or entity would be established separately for surfclams and ocean quahogs. Since the cap is based on the possession of allocation that are both owned and transferred, it accounts for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit.
Sub-Alternative 3.1: Cap based on highest level of tag possession in the ownership and transfer data, 2016-2017	The caps would be based on the highest level of both owned quota share and cage tags by an individual or entity reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species. If fully consolidated, this sub-alternative could potentially result in a minimum of two to four large entities participating in the surfclam fishery and three to four large entities participating in the ocean quahog fishery, depending on model or affiliation level used.

[3] **Quota Share Ownership:** The quota share held by an individual or entity. In a manner of speaking, "ownership" usually represents a property right in perpetuity or for as long as the owner wants. However, under MSA there are some important policy issues with respect to duration in the design of limited access privilege programs (e.g., ITQs). The MSA stipulates that limited access privileges may be revoked or limited in accordance with the Act, they do not confer rights of compensation, and they do not create any ownership of a fish before it is harvested [Section 303A(b)] (NMFS 2007).

Box ES-1 (Continued). Summary of the excessive shares cap alternatives. ***The Council needs to choose a specific model and affiliation level to implement and/or monitor any particular excessive shares cap level.***

Alternatives	Summary of Alternative
Sub-Alternative 3.2: Cap at 40%	The cap on the possession of both owned quota share and cage tags by an individual or entity would be 40% for surfclams and 40% for ocean quahogs. This is based on the "Rule of Three" notion which allows three big and efficient companies (e.g., with more than 10% market share) to act as a tripod to ensure that neither destructive competition nor collusion prevails. A 40% cap could potentially result in a minimum (if fully consolidated) of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%).
Sub-Alternative 3.3: Cap at 49%	The cap on the possession of both owned quota share and cage tags by an individual or entity would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share of the total allowable landings. A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).
Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap based on possession of cage tags	A two-part cap approach would be implemented for each surfclams and ocean quahogs, with the first part being a cap on quota share ownership, and a second, annual allocation cap on the possession of cage tags by an individual or entity. This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Since the caps are based on quota share ownership and possession of cage tags, it accounts for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit.
***Sub-Alternative 4.1*:** Two-part cap based on highest level in the ownership and transfer data, 2016-2017	The two-part cap approach includes one cap on quota share ownership and a second cap on possession of cage tags by an individual or entity based on the highest levels reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species. If fully consolidated, this sub-alternative could potentially result in a minimum of four large entities participating in the surfclam fishery and five large entities participating in the ocean quahog fishery, depending of model or affiliation level used.
Sub-Alternative 4.2: Two-part cap based on highest level in the ownership and transfer data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation	The two-part cap approach would be based on values reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, a 15% for additional consolidation is added to the maximum values reported in the ownership and transfer data for the 2016-2017 period. The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate/grow if market conditions allow. If fully consolidated, this sub-alternative could potentially result in a minimum of three large entities participating in the surfclam fishery and three large entities participating in the ocean quahog fishery, depending of model or affiliation level used.
Sub-Alternative 4.3: Two part cap - quota share ownership cap at 30% and cap based on possession of cage tags at 60%	The two-part cap with a quota share ownership cap at 30% and the annual allocation cap (based on possession of cage tags by an individual or entity) at 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. If fully consolidated, this sub-alternative could potentially result in a minimum of four large entities (if fully consolidated) participating in the fisheries (i.e., 30%, 30%, 30%, 10%).

Box ES-1 (Continued). Summary of the excessive shares cap alternatives. ***The Council needs to choose a specific model and affiliation level to implement and/or monitor any particular excessive shares cap level.***	
Alternatives	**Summary of Alternative**
Sub-Alternative 4.4: Two part-cap - Quota share ownership cap and annual allocation cap based on possession of cage tags Surfclams: 35/65% Ocean quahogs: 40/70%	For surfclams: a two-part cap with a quota share ownership cap at 35% and an annual allocation cap (based on possession of cage tags) at 65%. For ocean quahogs: a two-part cap with a quota share ownership cap at 40% and an annual allocation cap (based on possession of cage tags by an individual or entity) at 70%. This sub-alternative was recommended by the Surfclam and Ocean Quahog Committee based on their review of public comments. If fully consolidated, this sub-alternative could potentially result in a minimum of three large entities participating in the surfclam fishery (i.e., 35%, 35%, 30%) and three large entities participating in the ocean quahog fishery (i.e., 40%, 40%, 20%).
Alternative 5: Quota share ownership cap-only at 40%with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota	The cap would be 40% for surfclams and 40% for ocean quahogs with unlimited possession of cage tags allowed during the fishing year plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (annual catch target) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. A 40% cap could potentially result in a minimum (if fully consolidated) of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%).
Alternative 6: Quota share ownership cap-only at 49% with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota	The cap would be 49% for surfclams and 49% for ocean quahogs with unlimited possession of cage tags allowed during the fishing year plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share plus the transfer/leasing of quota share allocation within the fishing year. A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).

Box ES-2. Summary of the excessive shares review alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	There would not be a requirement for periodic review of implemented excessive share cap measures.
Alternative 2: Require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed	This alternative would require for periodic review of excessive shares measures that the Council adopts.

Box ES-3. Summary of the framework adjustment process alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No changes to the list of management measures that can be addressed via the framework adjustment process.
Alternative 2: Add excessive shares cap level to the list of measures to be adjusted via framework	This alternative would of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap), only if the modification would not result in an entity having to divest.

Box ES-4. Summary of the multi-year management measures alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No changes to the process to set surfclam and ocean quahog management specifications for up to 3 years.
Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule	Specifications could be set for a period up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set until a new surfclam and/or ocean quahog assessment is produced.

1.2 Summary of Impacts

The following section presents a summary of the expected impacts by alternative and cumulative for management alternatives being considered (Boxes ES-5 to ES-8). The impacts of each alternative, and the criteria used to evaluate them, are described in section 7.0. Impacts (qualitative and/or quantitative) are described in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). In section 7.0, the alternatives are compared to current condition of the value ecosystem component (VEC) and also compared to each other. The recent conditions of the VECs include the biological condition of the target stock, non-target stocks, and protected species over most of the recent five years, as well as characteristics of commercial fisheries and associated human communities over the same time frame. The guidelines used to determine impacts to each VEC are described in section 7.0 (see especially Table 16).

The actions proposed through this amendment are largely administrative in nature and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted. However, these alternatives may have indirect impacts, particularly for the human communities VEC.

In general terms, measures that would curtail entities from exerting market power and therefore not decreasing competition would have positive socioeconomic impacts. Lastly, measures that would result in community disruptions as result of additional consolidation (e.g., decrease in the number of independent harvesters, decrease in employment) would have negative socioeconomic impacts.

Excessive consolidation, in an economic context, is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery. Anticipated impacts are described below.

1.2.1 Excessive Share Alternatives

1.2.1.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. None of

the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, none of the alternatives evaluated are expected to have impacts (direct or indirect) on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.1.2 Human Communities/Socioeconomic Impacts

Alternative 1

As previously indicated, none of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions.

Under alternative 1 (no action/*status quo*) the current management approach regarding excessive shares (i.e., share accumulation) would continue. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. The FMP would rely only on federal anti-trust provisions. The Department of Justice (DOJ) has indicated that their Business Practice Process does provide a pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment. Therefore, this alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0), and a means to track and monitor ownership relative to that definition is needed.

Since alternative 1 does not include a limit or definition of excessive shares accumulation, it could potentially lead to one entity holding 100% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. An excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries. Alternative 1 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions.

Alternative 2

Alternative 2 considers a single cap on how much quota one individual or entity could hold. The cap would be based on quota share ownership only with unlimited possession of cage tags allowed during the fishing year. Because alternative 2 is based on ownership-only values, none of the sub-alternatives discussed below account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are

prevalent in the fisheries when setting the cap limit. Participants in these fisheries have reported that there are various types of transactions involving cage tags that commonly occur, including cage tag transfers, long-term leases (e.g., five years or more), transfers of cage tags from bank lenders, and between both related and unrelated business entities.

Note: The Council needs to choose a specific affiliate level (individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and/or monitor any particular excessive shares cap level.[4]

Under Sub-alternative 2.1, the single quota share ownership caps would be based on the highest level of quota share held by any individual or entity reported in the ownership data for each fishery for the 2016-2017 period. The highest level of quota share held by any individual or entity during 2016-2017 was 28% for surfclams and 22% for ocean quahogs (regardless of model or affiliation level; Tables 2 and 3). If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in this fishery (i.e., 28%, 28%, 28%, and 16%; Table 18). If fully consolidated, a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in this fishery (i.e., 22%, 22%, 22%, 22%, and 12%; Table 18). This implies at least four entities in the surfclam and five entities in the ocean quahog fisheries, which may provide some protection against excessive consolidation and associated market power and social issues. However, as indicated in section 5.0, it is also possible that under all alternatives evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

If the surfclam and ocean quahog cap levels described above (28% and 22%, respectively) had been implemented in 2017, all entities would have fallen at or below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.1 in the surfclam or ocean quahog fisheries. Sub-alternative 2.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Under Sub-alternative 2.2, the single quota share ownership cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share plus the transfer/leasing of quota share allocation within the fishing year. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.2 in the surfclam or ocean

[4] See Definitions and Terminology at the end of Section 2.0 for more information on these choices. More detailed information on these choices is also found in sections 5.0 and 7.0.

quahog fisheries. Sub-alternative 2.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Under Sub-alternative 2.3, the single quota share ownership cap would be 95% for surfclams and 95% for ocean quahogs. If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%; Table 18). This sub-alternative was recommended for inclusion by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). It is stated in the Compass Lexecon Report it is possible that under some circumstances an excessive shares cap level of 100% may be appropriate. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011).

Sub-alternative 2.3 could potentially result in quota accumulation levels that are near identical to those under alternative 1 (*status quo* alternative). If one firm or entity controls 95% of the quota, there would be no market for leasing under the current quota levels for these species, as nearly all the quota would be held by a single entity. Sub-alternative 2.3 could potentially allow for share concentration levels similar to those under the current conditions and as such, it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries.

If the surfclam and ocean quahog cap levels described above (95% for surfclam and 95% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.3 in the surfclam or ocean quahog fisheries. Sub-alternative 2.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions.

Comparisons Across Sub-Alternatives 2.1 to 2.3

In this section a comparison between sub-alternatives 2.1 through 2.3 is made. This is different from the previous section where each of these sub-alternatives were compared to current conditions.

Sub-alternative 2.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 2.2 and 2.3 as no entity would be above the caps (if they had been implemented in 2017). However, in the long-term, alternative 2.1 would have slight positive socioeconomic impacts compared to sub-alternative 2.2, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.1 would have positive socio-economic impacts compared to sub-alternative 2.3, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation (as sub-alternative 2.3 could potentially result in one large entity controlling 95% of the quota for surfclam and/or ocean quahogs).

Sub-alternative 2.2 would have less positive socioeconomic impacts in the long-term compared to sub-alternatives 2.1, as sub-alternative 2.2 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.2 would have positive socioeconomic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.2 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 2.3 would have negative socioeconomic impacts in the long-term compared to sub-alternatives 2.1 and 2.2, as sub-alternative 2.3 has the potential to provide the smallest degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 2.1 would result in the most positive impacts, sub-alternative 2.2 would result in the second most positive impacts, and sub-alternative 2.3 would result in the least positive impacts.

Alternative 3

Alternative 3 considers a cap based on possession of both owned quota share and cage tags. Because alternative 3 is based on possession of both owned quota share and cage tags by an individual or entity, it would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that occur in these fisheries, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

Under Sub-alternative 3.1, the cap would be based on the highest level of possession of both owned quota share and cage tags by any individual or entity reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period. Under sub-alternative 3.1, depending on the affiliate level and model selected, the cap for surfclam could be as low as 28% under the net actual percentage model (at the individual/business level) or as high as 49% under the cumulative 100% model (at the corporate officer level; Tables 2 and 19). Based on these cap values, sub-alternative 3.1 could result in a minimum number of large entities (if fully consolidated) in the surfclam fishery ranging from four under the net actual percentage model to two under the cumulative 100% model (Table 19). Under this alternative, depending on the affiliate level and model selected, the cap for ocean quahogs could be as low as 29% under the net actual percentage model (at the individual/business level) or as high as 41% under the cumulative 100% model (at the corporate officer level; Table 3 and 19). For ocean quahogs, this sub-alternative could result in a minimum number of large entities (if fully consolidated) ranging from four under the net actual percentage model to three under the cumulative 100% model (Table 19).

If the surfclam and ocean quahog cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.1 in the surfclam or ocean quahog fisheries. Sub-alternative 3.1 is expected to

have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, some of the potential lower cap values under this sub-alternative (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values.

Under Sub-alternative 3.2, the cap on the possession of both owned quota share and cage tags by an individual or entity would be 40% for surfclams and 40% for ocean quahogs. This is based on the "Rule of Three" notion (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 19).

If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those caps under the net actual percentage model for both surfclams and ocean quahogs. However, under the cumulative 100% model, between one (1% of all entities) and three (4% of all entities) surfclam entities and between one (2% of all entities) and four (9% of all entities) ocean quahog entities would have exceeded these caps depending on the affiliation level (Table 19).

In general terms, sub-alternative 3.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, as indicated above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have exceeded a 40% cap. As such, this sub-alternative would have negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their total allocation (cage tags) held that year, (which could have been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags possessed that year. This could be accomplished by transferring fewer tags to their possession that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Under Sub-alternative 3.3, the cap on the possession of both owned quota share and cage tags by an individual or entity would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share of the total allowable landings. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 19).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share and cage tags caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.3 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Comparisons Across Sub-Alternatives 3.1 to 3.3

In this section a comparison between sub-alternatives 3.1 through 3.3 is made. This is different from the previous section where each of these sub-alternatives were compared to current conditions.

Sub-alternative 3.1 would have neutral socioeconomic impacts in the short-term compared to sub-alternatives 3.2 and 3.3, as in general terms, no entity would be above the caps (if they had been implemented in 2017; the exception to this generality is listed below). In the long-term, alternative 3.1 would have neutral socioeconomic impacts in the long-term compared to sub-alternative 3.2, because they both could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 19). The exception to this generalization would be sub-alternative 3.1 under the cumulative 100% model which would result in two large entities participating in the surfclam fishery, and as such, provides a lesser degree of protection against excessive consolidation and associated market power and social issues. As such, this results in long-term positive impacts that are smaller in magnitude. Lastly, in general terms, sub-alternative 3.1 would have positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.1 has the potential to provide a larger degree of protection against excessive consolidation. However, some of the potential lower cap values under sub-alternative 3.1 (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values. As such, under these sub-alternative 3.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 3.2 and 3.3.

Sub-alternative 3.2 would have slight positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.2 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. However, as noted above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have exceeded the 40% cap. As such, this sub-alternative would have negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their total amount of allocation (cage tags) held, which could have been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags possessed that year.

This could be accomplished by transferring fewer tags to their possession that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Sub-alternative 3.3 would have slightly less positive socioeconomic impacts in the long-term compared to sub-alternatives 3.1 and 3.2, as sub-alternative 3.3 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 3.1 would result in the most positive impacts, sub-alternative 3.2 would result in the second most positive impacts, and sub-alternative 3.3 would result in the least positive impacts.

Alternative 4

Alternative 4 considers a two-part cap approach, with the first part being a cap on quota share ownership, and a second cap on the possession of cage tags by an individual or entity. This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Mitchell et al. (2011) indicated that "the preference for short-term accumulations in the two-part cap limits the share of long-term quota controlled by any single party, which limits the ability to foreclose competitors by withholding quota on a committed multiseason basis." Because alternative 4 is based on a two-part cap approach that limits the possession of both owned quota share and cage tags by an individual or entity, it accounts for transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that occur in these fisheries. This alternative would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

Under Sub-alternative 4.1, the two-part cap approach includes one cap on quota share ownership and a second cap on cage tags by an individual or entity based on the highest levels reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period.

Under sub-alternative 4.1, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 28% quota share ownership / 28% cage tags under the net actual percentage model (at the individual/business level) or as high as 28% quota share ownership / 49% cage tags under the cumulative 100% model (at the corporate officer level; Tables 2 and 20). Based on these cap values, sub-alternative 4.1 could result in a minimum of four large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 22% quota share ownership / 29% cage tags under the net actual percentage model (at the individual/business level) or as high as 22% quota share ownership / 41% cage tags under the cumulative 100% model (at the corporate officer level; Tables 3 and 20). For ocean quahogs, this sub-alternative could result in a minimum of five large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries. Sub-alternative 4.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota. However, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% quota share ownership / 28% cage tags under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values.

Under Sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership and transfer data for 2016-2017 to allow for additional consolidation (Table 20). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow.

Under sub-alternative 4.2, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 43% quota share ownership / 43% cage tags under the net actual percentage model (at the individual/business level) or as high as 43% quota share ownership / 64% cage tags under the cumulative 100% model (at the corporate officer level; Table 20). Based on these cap values, sub-alternative 4.2 could result in a minimum of three large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 37% quota share ownership / 44% cage tags under the net actual percentage model (at the individual/business level) or as high as 37% quota share ownership / 56% cage tags under the cumulative 100% model (at the corporate officer level; Table 20). For ocean quahogs, this sub-alternative could result in a minimum of three large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.2 in the surfclam or ocean quahog fisheries. Sub-alternative 4.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota.

Under Sub-alternative 4.3, the quota share ownership cap would be 30% and the cage tag cap (based on possession of cage tags by an individual or entity) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. If fully consolidated, a 30% quota share ownership cap and a 60% cage tag cap could potentially result in a minimum of four large entities (if fully consolidated) participating in the fisheries (i.e., 30%, 30%, 30%, 10%; Table 20).

If the surfclam and ocean quahog two-part cap levels described above (i.e., 30/60%) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.3 in the surfclam or ocean quahog fisheries. Sub-alternative 4.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota.

Under sub-alternative 4.4, the following cap levels would be implemented - for surfclams: a two-part cap with a quota share ownership cap at 35% and a cage tag cap (based on possession of cage tags by an individual or entity) at 65%; and for ocean quahogs: a two-part cap with a quota share ownership cap at 40% and a cage tags cap (based on possession of cage tags) at 70%. If fully consolidated, this sub-alternative could potentially result in a minimum of three large entities participating in the surfclam fishery (i.e., 35%, 35%, 30%) and three large entities participating in the ocean quahog fishery (i.e., 40%, 40%, 20%; Table 20). The cap values under sub-alternative 4.4 are a slight modification from the values presented under sub-alternative 4.3. The cap values under sub-alternative 4.4 were recommended by most industry members during the public hearing process.

If the surfclam and ocean quahog two-part cap levels described above (i.e., 35/65% for surfclams and 40/70% for ocean quahogs) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.4 in the surfclam or ocean quahog fisheries. Sub-alternative 4.4 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota.

Comparisons Across Sub-Alternatives 4.1 to 4.4

In this section a comparison between sub-alternatives 4.1 through 4.4 is made. This is different from the previous section where each of these sub-alternatives were compared to current conditions.

In general terms, sub-alternatives 4.1, 4.2, 4.3, and 4.4 are likely to have neutral socioeconomic impacts (e.g., similar magnitude and direction) in the short-term and long-term, because they all could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 20). In general terms, sub-alternatives 4.1, 4.3, and 4.4 would result in neutral socioeconomic impacts in the short-run and long-run but marginally positive compared to sub-alternative 4.2. As such, they all have the potential to provide a relatively similar degree of protection against excessive consolidation and associated market power and social issues. In addition, none of these sub-alternatives would result in any entity been above the caps (if they had been implemented in 2017). However, some of the potential lower two-part cap values under sub-alternative 4.1 (e.g., 28% quota share ownership / 28% cage tags under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 4.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 4.2, 4.3, and 4.4.

Alternative 5

Alternative 5 considers a cap on quota share ownership-only of 40% for surfclams and 40% for ocean quahogs with unlimited possession of cage tags allowed during the fishing year. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (annual catch target) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

The 40% cap is based on the "Rule of Three" notion (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011).

If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 21). If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 21). As such, no entity would have been constrained by the cap levels under alternative 5 in the surfclam or ocean quahog fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase. In addition, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners.

However, it is possible that there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. Alternative 5 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. For example, it was indicated that:

- Establishing a Quota A and Quota B shares system would send a market signal indicating that the surfclam and ocean quahog quotas (TACs) have been reduced, because the amount of quota released under Quota A shares is lower than the overall TACs that have been implemented in recent years. This in turn could result in big companies that purchase clam products (e.g., Progresso, Campbell Soup Company, etc.) to switch to lower quality foreign imports
- Quota A and Quota B shares system would disrupt banking/financial arrangement because ITQ shares have been used as collateral in securing long-term loans
- Aligning the quota with market demand may not necessarily result in equilibrium because long-term contacts arrangement (leasing arrangements) exist in these fisheries; and breaking existing long-term contracts could result in lawsuits
- Aligning the quota with market demand would give market power to the industry members that have not been able to lease/use their ITQ shares in recent years
- This alternative could result in closing of processing plants
- There is the potential for someone to lease large quantities of A shares and not use them to develop market power

Alternative 6

Alternative 6 considers a cap on quota share ownership-only of 49% for surfclams and 49% for ocean quahogs with unlimited possession of cage tags allowed during the fishing year. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the tilefish golden IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share plus the transfer/leasing of allocation within the fishing year. The only difference between alternatives 5 and 6 are the cap levels on quota share ownership, all other aspects of the alternatives are identical.

If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%). If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office). As such, no entity would have been constrained by the cap levels under alternative 6 in the surfclam or ocean quahog fisheries. Alternative 6 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed under alternative 5 and also apply here.

Comparisons Across All Excessive Shares Cap Alternatives

In general terms, alternatives 5 and 6 would result in the largest positive impacts as a result of protection against market power or other anticompetitive behaviors and associated social issues, alternatives 3 and 4 would result in the second highest positive impacts, alternative 2 would result in the third highest positive impacts, and alternative 1 would result in the least positive impacts. More detail of the expected impacts is provided below.

Alternative 1 (No Action)

As previously indicated, under alternative 1 (no action) no limit or definition of excessive shares accumulation is included in the FMP. This alterative is expected to result in impacts ranging from no impacts in the short-term to negative impacts in the long-term when compared to alternatives 2 through alternative 6, because alternative 1 provides no protection against excessive consolidation and associated market power and social issues. The exception would be when alternative 1 is compared to sub-alternative 2.3, as sub-alternative 2.3 could potentially allow for share

concentration levels similar to those under alternative 1, and it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Compared to sub-alternative 2.3, alternative 1 is likely to have a similar magnitude of socioeconomic impacts (i.e., neutral).[5]

None of the excessive share alternatives discussed in this document are expected to impact the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted. However, these alternatives may have indirect impacts, particularly for the human communities VEC.

Alternative 2

Alternative 2 would implement a single cap based on quota share ownership-only with unlimited possession of cage tags allowed during the fishing year. Because alternative 2 is based on ownership-only values, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. This alternative would limit the exercise of market power through capping ownership levels for surfclams and ocean quahogs, but it does not address the creation or exercise of market power through contractual control of quota.

Alternative 2 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 3 and alternative 4, alternative 2 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternatives 3 and 4).

Lastly, alternative 2 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 3

Alternative 3 would implement a cap based on quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined possession of both owned quota share and cage tags, it would limit the exercise of market power that could be derived through both

[5] Since sub-alternative 2.3 is likely to result in impacts similar to those under alternative 1, all other comparisons involving alternative 2 exclude sub-alternative 2.3, with the understanding that when comparisons are made with sub-alternative 2.3 exclusively, impacts would be similar to those under alternative 1 (no action/*status quo*).

quota share ownership and contractual control of quota. This alternative imposes a combined limit on quota share ownership plus cage tag leasing, which would account for transactions and complex contracting and business practices that occur in these fisheries.

Alternative 3 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 3 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 3). Compared to alternative 4, alternative 3 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 3 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 4

Alternative 4 would implement a two-part cap approach, with the first part being a cap on quota share ownership, and a second cap on the possession of cage tags by an individual or entity. Because alternative 4 is based on a two-part cap approach that limits the combined possession of both owned quota share and cage tags by an individual or entity, it would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota. This alternative imposes a limit on the possession of cage tags, which would account for transactions and complex contracting and business practices that occur in these fisheries.

Alternative 4 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 4 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 4). Compared to alternative 3, alternative 4 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota.

Lastly, alternative 4 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through

capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 5

Alternative 5 would implement a cap on quota share ownership-only with unlimited possession of cage tags allowed during the fishing year. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Alternative 5 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because alternative 5 not only addresses the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also aligns supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. For these same reasons, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) compared to alternatives 2, 3, and 4, but likely larger in magnitude. Lastly, compared to alternative 6, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. However, under alternative 5, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners.

However, as indicated above, during the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed above under alternative 5.

Alternative 6

The expected impacts under alternative 6 are similar to those described under alternative 5 above.

1.2.2 Excessive Shares Review Alternatives

1.2.2.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would not be a requirement for periodic review of implemented excessive shares measures. Alternative 2, would require for periodic review of excessive shares measures that the Council adopts. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.2.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels (and expected ex-vessel revenues), fishery distribution, or fishing methods and practices. However, conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure established at an appropriate level now could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry). Thus, not having a mechanism in place to review the effectiveness of implemented excessive shares measures (alternative 1) could result in socioeconomic impacts that range from no impacts (if implemented excessive shares measures is appropriate through time) to slight negative (if implemented excessive shares measures is not appropriate through time) when compared to current conditions.

Alternative 2, is also administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. As with the no action alternative above, alternative 2 is not expected to have impacts on the quantity of surfclam or ocean quahog landings, including revenues. However, this alternative requires periodic review of excessive shares measures that the Council adopts. This alternative would implement a periodic review of regulations to protect against market power or other anticompetitive behavior in these fisheries in a timely manner. Alternative 2 is expected to result in socioeconomic impacts ranging from no impacts to slight positive when compared to current conditions. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts as it allows for a proactive review of excessive management shares management measure(s) implemented by the Council. While it is not possible to anticipate the potential management costs associated with alternative 2, they are likely to be higher than those associated with alternative 1. Costs will depend on the complexity and scope of the review process.

1.2.3 Framework Adjustment Process Alternatives

1.2.3.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would not be changes to the list of management measures that can be addressed via the framework adjustment process. Alternative 2 would expend of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.3.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels (and expected ex-vessel revenues), fishery distribution, or fishing methods and practices. Alternative 1 (no action) would not allow the excessive shares cap level to be modified via the framework adjustment process. The Council would still have the prerogative to review any adopted excessive shares measures and make modifications to any implemented excessive cap level through an amendment if it becomes inefficiently high or low through time as fisheries conditions change. However, making modifications to existing regulations using an amendment process requires more work and time compared to a framework process. Not having the flexibility to make minor modifications to the excessive shares cap level (no action alternative) could result in socioeconomic impacts ranging from no impact to slightly negative when compared to current conditions. Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. The proposed alternative would provide flexibility to address potential modifications to any implemented excessive cap level (i.e., cap value only and not underlaying cap system) if it becomes inefficiently high or low through time as fisheries conditions change. Alternative 2 is expected to result in socioeconomic impacts that range from no impact to slight positive when compared to current conditions. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts because this alternative provides the flexibility to adjust potential modifications to any implemented excessive cap level if it becomes inefficiently or low through time as fisheries conditions change, and this has the potential to reduce needed staff time and management cost.

1.2.4 Multi-Year Management Measures Alternatives

1.2.4.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources. Although there are no impacts on the VECs, alternative 2 would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

1.2.4.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and would therefore have no impacts on human communities (i.e., socioeconomic impacts).

Box ES-5. Summary of the expected impacts of excessive shares cap alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least).

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 1 (No-Action/*Status Quo*)	No limit or definition of an excessive share is included in the FMP	No Impact	No impact in the short-term to - in the long-term if consolidation patterns result in decreased competition. Could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries	NA (Not Applicable)
Alternative 2 Sub-alternative 2.1	Single Cap - Quota share ownership cap based on highest level in the ownership data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Cap based on ownership-only)	1
Alternative 2 Sub-alternative 2.2	Single Cap - Quota share ownership cap at 49%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Cap based on ownership-only)	2
Alternative 2 Sub-alternative 2.3	Single Cap - Quota share ownership cap at 95%	No Impact	Similar impacts as under alternative 1 (above)	3
Alternative 3 Sub-alternative 3.1	Quota Share and Cage Tag Cap - based on highest level of tag possession in the ownership and transfer data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota share ownership and contractual control of quota). However, some of the potential lower cap values under this sub-alternative (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values.	1
Alternative 3 Sub-alternative 3.2	Quota Share and Cage Tag Cap at 40%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota share ownership and contractual control of quota). If implemented in 2017, this sub-alternative would had constrained 4 entities, incurring slight negative socioeconomic impacts in the short-term and long-term	2

Box ES-5 (Continued). Summary of the expected impacts of excessive shares cap alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least).

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 3 Sub-alternative 3.3	Quota Share and Cage Tag Cap at 49%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota share ownership and contractual control of quota)	3
Alternative 4 Sub-alternative 4.1	Two-part cap (one cap on quota share ownership and a second cap on cage tags) - based on highest level in the ownership and transfer data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on quota share ownership and cage tag cap. However, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% quota share ownership / 28% cage tags under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values.	1
Alternative 4 Sub-alternative 4.2	Two-part cap - Same as 4.1 + 15%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on quota share ownership and cage tag cap	2
Alternative 4 Sub-alternative 4.3	Two-part cap - quota share ownership cap at 30% and cage tag cap at 60%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on quota share ownership and cage tag cap	1
Alternative 4 Sub-alternative 4.4	Two part-cap - Quota share ownership cap and cage tag cap Surfclams: 35/65% Ocean quahogs: 40/70%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on quota share ownership and cage tag cap	1

Box ES-5 (Continued). Summary of the expected impacts of excessive shares cap alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least).

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 5	Quota share ownership cap-only at 40% with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Aligns supply in the fisheries with market demand). However, this alternative would result in processors paying more in financial cost (due to additional leasing and/or purchase costs), thus resulting in negative socioeconomic impacts in the short-term and long-term. This alternative will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners. During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices	NA
Alternative 6	Quota share ownership cap-only at 49% with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota	No Impact	Same as those under alternative 5 above	NA

Box ES-6. Summary of the expected impacts of excessive shares review alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact to slight -
Alternative 2	No Impact	No Impact	No Impact	No impact to slight +

Box ES-7. Summary of the expected impacts of framework adjustment process alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact to slight -
Alternative 2	No Impact	No Impact	No Impact	No impact to slight +

Box ES-8. Summary of the expected impacts of multi-year management alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No Impact
Alternative 2	No Impact	No Impact	No Impact	No Impact

2.0 LIST OF FREQUENTLY USED ACRONYMS, CONVERSIONS, AND DEFINITIONS

Frequently Used Acronyms

ABC	Acceptable Biological Catch
ACT	Annual Catch Target
bu	Bushels
CEA	Cumulative Effects Assessment
COE	Chief Executive Officer
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIE	Center for Independent Experts
cm	Centimeter (0.393 inches)
CSP	Catch Share Programs
DOJ	U.S. Department of Justice
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EMUs	Ecological Marine Units
EO	Executive Order
ESA	Endangered Species Act
F	Fishing Mortality Rate
FMAT	Fishery Management Action Team
FMP	Fishery Management Plan
FR	Federal Register
FONSI	Finding of No Significant Impact
GAO	Government Accountability Office
GARFO	Greater Atlantic Regional Fisheries Office
GB	Georges Bank
GOM	Gulf of Maine
GSC	Great South Channel
HMA	Habitat Management Area
IBQ	Individual Bluefin Quota
IFQ	Individual Fishing Quota
ITQ	Individual Transferrable Quota
k	Kilometer (0.621 miles)
LAPP	Limited Access Privilege Program
LPUE	Landings Per Unit of Effort
m	Meter (3.280 feet)
MAFMC	Mid-Atlantic Fishery Management Council (Council)
MFP	Multi-factor Productivity
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NRCC	Northeast Regional Coordinating Council
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NS	National Standard
OHA2	Omnibus Essential Fish Habitat Amendment 2 (NEFMC)
OFL	Overfishing Limit

OY	Optimal Yield
P, Pr, RFF	Past, Present, Reasonably Foreseeable Future
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
PSP	Paralytic Shellfish Poisoning
R	Recruitment
R_0	Recruitment in an Unfished Stock
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SBA	Small Business Administration
SSB	Spawning Stock Biomass
SSC	Scientific and Statistical Committee
SASI	Swept Area Seabed Impact
U.S.	United States
VEC	Valued Ecosystem Component
VMS	Vessel Monitoring Systems
WGOM	Western Gulf of Maine

Conversions

1 metric ton (mt) = 2,204.622 pounds (lb); 1 kilometer = 0.621 miles; 1 meter (m) = 3.280 feet (ft); 1 centimeter (cm) = 0.393 inches; 1 Maine bushel = 11 lb meats (1.2445 ft^3); 1 Atlantic surfclam bushel = 17 lb meats (1.88 ft^3) ; 1 ocean quahog bushel = 10 lb meats (1.88 ft^3). Number of bushels divided by 32 = number of cage tags.

Definitions and Terminology

Annual Allocation/Cage Tags: For each species (surfclam and ocean quahogs), the initial allocation for the next fishing year is calculated by multiplying the quota share percentage held by each ITQ quota share holder by the quota specified by the Regional Administrator. The total number of bushels of annual allocation is divided by 32 to determine the appropriate number of cage tags to be issued to quota share allocation holders.

Atlantic Surfclam and Ocean Quahog Information Collection Program Data: Requirements became effective on January 1, 2016. The Atlantic Surfclam and Ocean Quahog Information Collection Program was implemented at the request of the Council to provide additional information about corporate ownership and other forms of control of allocations. This information allows managers to better characterize current levels of ownership concentration to assist in defining an excessive share, and to monitor and enforce any future restriction on share levels in the fisheries.

Excessive Consolidation: In an economic context, it is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

Excessive Share: For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap level that is intended to prevent a firm or entity from exerting market power. The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

ITQ (Individual Transferrable Quota): A form of output control in which harvesting privileges are allocated to individual fishermen.

ITQ Quota Share: Percent of the total quota held by each ITQ quota share holder, before it is converted into cage tags that are allocated for used by the fishery. The percent quota share held by an ITQ quota share holder is multiplied by the current fishery quota that is implemented, then divided by 32 to determine the number of cage tags received.

Monopoly: A market situation where there is only one seller of a product, and where there are no close substitutes of the product.

Monopsony: A market situation where there is only buyer of a product.

National Standards (NS): The National Standards are principles that must be followed in any fishery management plan to ensure sustainable and responsible fishery management. As mandated by the Magnuson-Stevens Fishery Conservation and Management Act, NMFS has developed guidelines for each National Standard. When reviewing fishery management plans, plan amendments, and regulations, the Secretary of Commerce must ensure that they are consistent with the National Standard guidelines. See section 8.0 of this document for more detail on the 10 National Standards under the MSA. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 4 - Allocations: Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (a) fair and equitable to all such fishermen; (b) reasonably calculated to promote conservation; and (c) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privilege. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 5 - Efficiency: Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 8 - Communities: Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirement of paragraph (2) [i.e., National Standard 2], in order to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

Oligopoly: A market situation with relatively few sellers who are mutually interdependent in their marketing activities (e.g., some food processing industries are oligopolistic).

Oligopsony: A market situation where there are a few buyers of a product and each of the few buyers exerts a disproportionate influence on the market.

Ownership Data: This term is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data (see above)."

Quota Share Ownership: The quota share held by an individual or entity. In a manner of speaking, "ownership" usually represents a property right in perpetuity or for as long as the owner wants. However, under MSA there are some important policy issues with respect to duration in the design of limited access privilege programs (e.g., ITQs). The MSA stipulates that limited access privileges may be revoked or limited in accordance with the MSA, they do not confer rights of compensation, and they do not create any ownership of a fish before it is harvested [Section 303A(b)] (NMFS 2007).

Transferability Rules: These allow ITQ allocation holders to buy, sell, give away (permanent transfer ITQ quota share) or lease their privileges (temporarily transfer cage tags). When quota is leased out, cage tags are temporarily transferred from the ITQ quota allocation holder (lessor) to the person leasing cage tags (lessee).

Two-Tier Quota: Quota system that aligns supply in the fisheries with market demand (described under excessive share alternatives 5 and 6). Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the annual catch target (ACT) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

Models for determination of quota share ownership (or share totals for quota share ownership) and cage tag possession (ownership plus leasing of cage tags):

Ownership Percentage Models: There are models for determination of quota share ownership (or share totals for quota share ownership) and cage tag possession (ownership plus leasing of cage tags)

Net Actual Percentage Model - Net Actual Percentage Model - Each owner's share in a business is used to determine the percentage of business ownership in that business's owned quota share or in the percentage of issued tags. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

Cumulative 100% Model - Cumulative 100% Model - Any ownership interest in a quota share or ownership of cage tags by an individual or business is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits/inputs (initial cage tag allocation and tag transfers in) accrue over the year for each person; debits/outputs (sale of quota share and tag transfers out) are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels:

Individual/Business Level - Smallest unit at the individual level or business (if an individual owner cannot be identified);

Family Level **(individual / business level + family level)*** - Includes any family associations that are not already accounted at the individual business level ; and,

Corporate Officer Level **(individual / business level + family level + corporate officer level)** - Includes association through corporate officer's that are not accounted for in the other levels.

*On the "Surfclam/Ocean Quahog Individual Transferable Quota (ITQ) Ownership Form," *Immediate Family* is defined as: Father, mother, husband, wife, son, daughter, brother, sister, grandfather, grandmother, grandson, granddaughter, father-in-law, or mother-in-law (https://www.greateratlantic.fisheries.noaa.gov/aps/forms.html).

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4.0 INTRODUCTION AND BACKGROUND

This document was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA)[6] and National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ), and the Atlantic Surfclam and Ocean Quahog FMP. The management regime and objectives of the fisheries are detailed in the FMP, including any subsequent amendments are available at: http://www.mafmc.org, and briefly described below.

4.1 PURPOSE AND NEED OF THE ACTION

The primary purpose of this action is to implement measures under the MSA to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. National Standard 4 states that "... *If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges*." In 1990 Amendment 8 implemented the ITQ program for the Atlantic surfclam and ocean quahog fisheries. Amendment 8 did not include a specific cap or measures that limited the maximum amount of shares that could be owned by an individual, corporation, or entity (MAFMC 1988).

In the 27 years since the implementation of the ITQ program, the number of firms or entities participating in these two fisheries have declined and action is needed to avoid excessive share concentration by defining what constitutes an excessive share in the Atlantic surfclam and ocean quahog ITQ privileges to ensure the FMP is in compliance with the MSA. In 2016, a new data collection protocol was implemented by NMFS that allows managers to better assess quota ownership and concentration levels.[7]

For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the MSA, including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap level that is intended to prevent a firm or entity from exerting market power. The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

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[6] Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSRA), and available at: http://www.nmfs.noaa.gov/sfa/magact/MSA_Amended_2007%20.pdf

[7] Atlantic Surfclam and Ocean Quahog Information Collection Program Requirements became effective on January 1, 2016. The Atlantic Surfclam and Ocean Quahog Information Collection Program was implemented at the request of the Council to provide additional information about corporate ownership and other forms of control of allocations. This information allows managers to better characterize current levels of ownership concentration to assist in defining an excessive share, and to monitor and enforce any future restriction on share levels in the fisheries.

In an economic context, excessive consolidation is a level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopsony), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

In addition, this action includes measures to revise the process for specifying multi-year management measures. This action would allow multi-year management measures to be set for a maximum number of years consistent with the approved NRCC stock assessment schedule. This approach is expected to provide for better consistency and administrative efficiency. This action would also require periodic review of the excessive share cap level to be made and allow adjustments to the frameworkable provisions in the FMP.

Lastly, this action includes revisions to the goals and objectives of the FMP. The Council is undergoing a process to review and possibly revise goals and objectives for all its managed fisheries and FMPs. The Council initiated a process to consider revised goals and objectives for the FMP in support of its 2014-2018 Strategic Plan and 2017 Implementation Plan (http://www.mafmc.org/strategic-plan). This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they are consistent with today's fisheries and management issues. The issue is included in the Excessive Shares Amendment to take advantage of efficiencies in timing and public review.

There are currently 16 limited catch shares programs in the country. 13 of these programs have specific excessive shares cap level requirements. Two other programs do not specify an excessive shares cap level requirement, but they have other measures in place to avoid excessive accumulation of share or allocation. The surfclam and ocean quahog fisheries are the only federally-managed fisheries in the country that do not have measures to limit share accumulation.[8] See Appendix A for additional information on excessive share caps for catch shares programs in the USA.

4.2 FMP OBJECTIVES

4.2.1 Current FMP Objectives

The original FMP objectives were adopted through Amendment 8 to the Atlantic Surfclam and Ocean Quahog FMP, which implemented the ITQ system in 1990 (MAFMC 1988). The FMP objectives have remained unchanged since that time. This amendment proposed modification of objectives. The current FMP objectives are as follows:

[8] Section 303A of the MSA has additional requirements for catch share programs adopted after January 12, 2007.

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirements of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

After the ITQ system for the clam's fisheries was implemented in 1990, the Regional Administrator granted experimental status to the small-scale eastern Maine ocean quahog fishery that was operating in the EEZ. Amendment 10 fully integrated the Maine fishery into the Atlantic Surfclam and Ocean Quahog FMP. The specified objectives under Amendment 10 (MAFMC 1998a) did not change the overall FMP objectives adopted under Amendment 8. Specified FMP objectives for the eastern Maine ocean quahog fishery under Amendment 10 are as follows:

1. Protect the public health and safety by the continuation of the State of Maine's PSP (Paralytic Shellfish Poisoning) monitoring program for ocean quahogs harvested from the historical eastern Maine fishery.
2. Conserve the historical eastern Maine portion of the ocean quahog resource.
3. Provide a framework that will allow the continuation of the eastern Maine artisanal fishery for ocean quahogs.
4. Provide a mechanism and process by which industry participants can work cooperatively with Federal and State management agencies to determine the future of the historical eastern Maine fishery.

4.2.2 Proposed Revisions to FMP Objectives

As indicated in section 4.1, the Council is undergoing a process to review and revise goals and objectives for all their managed fisheries and FMPs. The Council initiated a process to consider revised goals and objectives for the Atlantic Surfclam and Ocean Quahog FMP in support of the 2014-2018 Strategic Plan and 2017 Implementation Plan. This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they are consistent with today's fisheries and management issues. The consideration of revising the FMP goals and objectives is separate from the Council's consideration of excessive share measures. This issue is included in the Excessive Shares Amendment to take advantage of efficiencies in timing and other resources.

Feedback and industry input on the FMP goals and objectives were gathered in a two-stage process. First, when the Council conducted scoping hearings to solicit public input on the development of the Excessive Shares Amendment, feedback on FMP goals and objectives was also gathered.

Second, the Council contracted the Fisheries Leadership & Sustainability Forum (Fisheries Forum) to develop a process to support the Council's review of FMP goals and objectives. The Fisheries Forum collected feedback from the Council's Surfclam and Ocean Quahog Committee, the Council's Surfclam and Ocean Quahog Advisory Panel, and state agency representatives from states engaged in the fisheries that were not represented on the Committee (Maine and Massachusetts). The Fisheries Forum synthetized all feedback gathered to identify major ideas and themes. The Council's Surfclam and Ocean Quahog Fishery Management Action Team (FMAT) reviewed this information and developed recommendations for new FMP goals and objectives. The Council reviewed the FMAT recommendations at the October 2017 Council meeting and approved the FMAT recommendations for inclusion in the public hearing document for this amendment in order to gather further input during the public hearing process. These recommendations are listed below. For additional details on the rationale for these recommendations see Appendix B.

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.

Objective 2.1: Promote compatible regulations between state and federal entities.

Objective 2.2: Promote coordination with the New England Fishery Management Council.

Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.

Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.

Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.

Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.

Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

4.3 MANAGEMENT UNIT

The management unit is all Atlantic surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) in the Atlantic EEZ. Amendment 10 also established a management regime specific to the eastern Maine fishery for a zone north of 43° 50' north latitude.

4.4 AMENDMENTS AND OTHER FMP MODIFICATIONS

The Council has been involved in surfclam and ocean quahog management since its first Council meeting (September 1976). An overview of the original FMP, amendments, and framework actions that have affected management of surfclams and ocean quahogs are summarized in Table 1. These actions are available on the Council's website at: http://www.mafmc.org/.

Table 1. Summary of the history of the Atlantic Surfclam and Ocean Quahog FMP.

Year Approved	Document	Management Action(s)
1977	Original FMP	- Established management of surfclam and ocean quahog fisheries through September 1979 - Established quarterly quotas for surfclams - Established annual quotas for ocean quahogs - Established effort limitation, permit, and logbook provisions - Instituted a moratorium on entry into the surfclam fishery for one year to allow time for the development of an alternative limited entry system such as a "stock certificate" program
1979	Amendment 1	- Extended management authority through December 31, 1979 - Maintained the moratorium
1979	Amendment 2	- Extended the FMP through the end of 1981 - Divided the surfclam portion of the management unit into the New England and Mid-Atlantic Area - Introduced a "bad weather make up day" - Maintained the moratorium in the Mid-Atlantic Area
1981	Amendment 3	- Extended the FMP indefinitely - Imposed a 5.5" surfclam minimum size limit in the Mid-Atlantic Area - Expanded the surfclam fishing week in the Mid-Atlantic Area to Sunday - Thursday from Monday – Thursday - Established a framework basis for quota setting - Proposed a permit limitation system to replace the moratorium which was disapproved by NMFS - NMFS extended the moratorium
1984	Amendment 4 (Not approved)	- Amendment 4 was implemented on an emergency basis for 180 days beginning 1 July 1984 - Provided that any unharvested portion of a bimonthly allocation be added to the immediately following bimonthly allocation rather than being prorated over all remaining bimonthly periods and that trip and weekly limits be by vessel classes based on relative fishing power - NMFS subsequently determined that the document was not structurally complete for review
1985	Amendment 5	- Allowed for revision of the surfclam minimum size limit provision - Extended the size limit throughout the entire fishery - Instituted a requirement that cages be tagged
1986	Amendment 6	- Divided the New England Area into the Nantucket Shoals and Georges Bank Areas, the dividing line being 69° W Longitude - Combined the provisions of Amendment 4 with the Mid-Atlantic Council's Amendment 6 into one document - Replaced the bimonthly quotas with quarterly quotas - Eliminate the weekly landing limits for the Nantucket Shoals Area - Clarified the quota adjustment provisions for the Nantucket Shoals and Georges Bank Areas - Established one landing per trip provision

Table 1 (Continued). Summary of the history of the Atlantic Surfclam and Ocean Quahog FMP.

Year Approved	Document	Management Action(s)
1987	Amendment 7	- Changed the quota distribution on Georges Bank to equal quarterly quotas - Revised the roll over provisions
1990	Amendment 8	- Replaced the regulated fishing time system in the surfclam and ocean quahog fisheries with an ITQ system
1996	Amendment 9	- Revised the overfishing definitions for surfclams and ocean quahogs in response to a scientific review by NMFS
1998	Amendment 10	- Provided management measures for the small artisanal fishery for ocean quahogs (mahogany clams) off the northeast coast of Maine
1998	Amendment 11	- Achieved consistency among Mid-Atlantic and New England FMPs on vessel replacement and upgrade provisions, permit history transfer and splitting and renewal regulations for fishing vessels issued Northeast Limited Access Federal Fishery permits
1999	Amendment 12	- Brought the FMP into compliance with the new and revised National Standards and other requirements of the 1996 Sustainable Fisheries Act - Established a framework adjustment process - Implemented an Operator Permit requirement for fishermen that did not already have them for other fisheries - The Regional Administrator partially approved Amendment 12 with the exceptions of the proposed surfclam overfishing definition and the fishing gear impacts to (Essential Fish Habitat) EFH section
2003	Amendment 13	- Addressed various disapproved sections of Amendment 12
2007	Amendment 14	- Standardized bycatch reporting methodology
2007	Framework 1	- Addressed issues related to Vessel Monitoring Systems (VMS) and enforcement
2011	Amendment 16	- Established Annual Catch Limits (ACLs) and Accountability Measures (AMs)
2015	Amendment 15	- Standardized Bycatch Reporting Methodology
2015	Amendment 18	- Eliminated the requirement for vessel owners to submit "did not fish" reports for the months or weeks when their vessel was not fishing - Removed some of the restrictions for upgrading vessels listed on Federal fishing permits
2016	Amendment 17	- Established a cost recovery program for the ITQ program, as required by the MSA - Removed the optimum yield ranges from the management plan and changed how biological reference points are incorporated into the FMP
2017	Amendment 19	- Implemented management measures to prevent the development of new, and the expansion of existing, commercial fisheries on certain forage species in the Mid-Atlantic
2018	Framework 2	- Established a process for setting constant multi-year Acceptable Biological Catch (ABCs) limits for Council-managed fisheries - Clarified that the Atlantic Bluefish, Tilefish, and Atlantic Mackerel, Squid, and Butterfish FMPs will now automatically incorporate the best available scientific information in calculating ABCs (as all other Mid-Atlantic management plans do) rather than requiring a separate management action to adopt them Clarified the process for setting ABCs for each of the four types of ABC control rules

4.5 HISTORY OF THE ACTION

Court Case

The final rule implementing the surfclam and ocean quahog ITQ program became effective on September 30, 1990. Almost immediately, lawsuits were filed by groups of harvesters and processors challenging various features of the program, most notably the formula for allocating fishing privileges among fishery participants. The case *Sea Watch International v. Mosbacher* [Secretary of Commerce], 762 F. Supp. 370 (D.D.C. 1991), illustrates the major legal challenges to the initial allocation. In general, the plaintiffs in the case argued that the initial allocation was not fair and equitable and therefore in violation of National Standard 4 of the MSA and,

"The plaintiffs claimed that the initial allocation allowed particular individuals, corporations, or other entities to acquire an excessive share of fishing privileges. Plaintiffs alleged that the allocation would concentrate 40 percent of the annual catch quota for the ocean quahog fishery in two fishermen, and that fragmentation of the remaining shares would result in further consolidation as holders of small shares sold their interests, creating an impermissible restraint on competition."[9]

The court noted the 40 percent number "does give pause" but found the MSA has no definition of the term "excessive shares" and that the judgment of NMFS of what is excessive "deserves weight." Further, the court stated, "Even if the raw number measured a true economic market - which is by no means clear - a judgment of undue concentration could not be based on the mere existence of such a share possessed by the two largest participants." With that, the court dismissed the plaintiffs' argument.

Tracking Shares Concentration Following ITQ Plan Implementation

During the development of Amendment 8, the Council discussed in detail the requirements under National Standard 4.[10] During those discussions, the Council was advised by NOAA General Counsel (GC) that in order to address part (C) of National Standard 4, there was no legal requirement to put a specific cap (numeric cap) into Amendment 8. GC indicated that a cap is simply a tool to address the National Standard 4 part (C) and that if the Council could come up with an equally effective mechanism to meet that requirement, they could use that mechanism. The Council's intent under Amendment 8 was to have NMFS annually monitor the concentration of ITQ (as ITQ owners have to apply to NMFS to transfer ITQ) and if it seemed that excessive consolidation was occurring (i.e., an excessive share was being amassed), they would advise the U.S. Department of Justice (DOJ), which would then determine if antitrust laws were being violated (Joel McDonald Personal Communication, July 16, 2017).

[9] Northern Economics, Inc. 2019. Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council. March 2019.

[10] National Standard 4 states that '*... If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges*.'

As such, during the early period of the implementation of Amendment 8, the Council believed that NMFS could effectively monitor the concentration of ITQ ownership.

While the court case upheld Amendment 8 in 1991 - one year after the ITQ was implemented - it became clear over time to NMFS that this administrative process did not work. The creation of new business entities (e.g., LLC's, etc.) with ITQ ownership, and the lack of a regulatory mechanism (by NMFS) to identify corporate ownership or business partnerships across individuals or entities involved hampered the ability to determine whether there was a concentration of quota ownership, and whether competitive conditions were being eroded in the quota share market over time.[11] Therefore, the review of industry concentration could not be conducted.

NMFS recognized they could no longer conclude that the ITQ program was carried out in such a manner to prevent someone from acquiring an excessive share of the fishing privileges and advised the Council of these concerns. GC indicated that the Council needed to put at least two regulatory components in place: one to identify the individuals behind the corporate entities listed as the owner of the ITQ, and an ownership cap or other control mechanism to keep individuals from acquiring the level of ITQ ownership that the Council deems to be "excessive." [12] It is important to recognize that MSA did not address this issue by incorporating definitions from antitrust law or simply relying on enforcement of antitrust law. Rather, MSA used the term "excessive share" - a term left undefined in the statute. As noted in a 2007 NMFS guidance document on limited access privilege programs, while share levels exceeding antitrust standards would clearly represent an excessive share, factors such as other MSA requirements and National Standards can lead a Council to a more restrictive share limit than antitrust law may otherwise permit. [13]

During the development of alternatives for the Excessive Shares Amendment, staff at the Council and GARFO (including GC) spoke with the Antitrust Division of the DOJ about the role that they might play in the monitoring of excessive shares in the surfclam and ocean quahog fisheries. The DOJ indicated that their Business Review Process does provide pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process[14] has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment, making it an unfeasible vehicle for ongoing monitoring of quota share ownership.[15] For additional steps taken by the Council and NMFS regarding the excessive shares issue, see "Chronology of this Action" section below.

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[11] For example, one person could form a couple of corporations and hold and acquire ITQ and it could not be determined whether or not this represented an excessive share since the ITQs would appear to be owned by legally separate entities.

[12] As noted in the *Sea Watch International* case, even though the initial ITQ program relied upon existing antitrust law to define excessive shares, NMFS and the Council retained the ability to modify the FMP and associated regulations, "without the permission of the ITQ holders." 762 F. Supp. at 380.

[13] NOAA Technical Memorandum NMFS-F/SPO-86, The Design and Use of Limited Access Privilege Programs, at 53-60 (NMFS 2007).

[14] For a detailed description of the Business Review process of the DOJ see: https://www.justice.gov/atr/business-reviews

[15] Sarah Heil, letter to Chis Moore, PhD, June 1, 2018.

Chronology of this Action

This section presents in chronological order major steps taken by the Council and/or NMFS in addressing the excessive shares issue.

1990

- Surfclam and ocean quahog ITQ program is implemented.

2002

- Discussion of excessive shares in these fisheries began as early as December 2002 with a Government Accountability Office (GAO) report "Individual Fishing Quotas: Better Information Could Improve Program Management." [16] The December 2002 GAO report stated:
    - Surfclam and ocean quahog quota consolidation is greater than NMFS data indicate. According to NMFS officials and others knowledgeable about the fishery, the quota holder of record (i.e., the individual or entity under whose name the quota is listed) is often not the entity that controls the use of the quota. Some families hold quota under the names of more than one family member; some parent corporations hold quota under the names of one or more subsidiaries; some entities hold quota under the name of one or more incorporated vessels; and some financial institutions serve as transfer agents and hold quota on behalf of others or in lieu of collateral for loans.
    - The governing rules of each program may have affected the extent of consolidation and the information collected. However, without clear and accurate data on quota holders and fishery-specific limits on quota holdings, it is difficult to determine whether any quota holdings in a particular fishery would be viewed as excessive, as prohibited by the MSA.
    - NMFS does not gather sufficient information or periodically analyze the data it does collect on surfclam/ocean quahog and Wreckfish quota holders to determine (1) who actually controls the use of the quota and (2) whether the holder is a foreign individual or entity. Furthermore, while each fishery is different, the regional councils have not defined the amount of quota that constitutes an excessive share in the surfclam/ocean quahog and wreckfish IFQ programs. Different program objectives and the political, economic, and social characteristics of each fishery make it difficult to define excessive share. However, without the information on who controls quota and defined limits on quota accumulation, NMFS cannot determine whether eligibility requirements are being met or raise questions as to whether any quota holdings are excessive.

[16] The U.S. Government Accountability Office (GAO; https://www.gao.gov/) is an independent, nonpartisan agency that works for Congress. Often called the "congressional watchdog," GAO examines how taxpayer dollars are spent and provides Congress and federal agencies with objective, reliable information to help the government save money and work more efficiently.

2003

- In 2003, NMFS responded to several members of Congress about the GAO report. NMFS indicated that it would urge the Council to develop a plan amendment that limits the shares that an individual may hold.

2004

- A 2004 NMFS report (by Doug Christel) was written in response to the GAO report, and highlighted some of the additional information needs in these fisheries. "This report concludes that the degree of concentration in the ITQ program described by the GAO is due to the amount of information available. Current data collection by NMFS is insufficient to assess [quota share] ownership concentration to the extent necessary to monitor excessive shares within the ITQ program. This is because limited information is collected on corporate structure or related business entities." In addition, "This report recommends that further information be collected regarding allocation ownership within the ITQ program."

2004 - 2011

- During this time period, several FMAT meetings were held to discuss this issue. Periodically, the Council was updated on FMAT activities. But during this time period, no decisions were made to move this action forward to the Council.

2011

- Compass Lexecon Report concluded that, "The evidence we analyzed does not support a conclusion that market power is currently being exercised through withholding of quota in the SCOQ [surfclam and ocean quahog fisheries]." However, the report indicates that, "We do not analyze whether market power is exercised through the withholding of harvesting or processing, or through exclusionary conduct other than conduct involving quota ownership."

- The Compass Lexecon Report was reviewed by the CIE. [Summary of Findings by the Center for Independent Experts Regarding Setting Excessive Share Limits for ITQ Fisheries. Northeast Fisheries Science Center Reference Document 11-22]. The review noted that:

    - Measures of industrial concentration in the surfclam and ocean quahog fisheries (the Herfindahl-Hirschman index or HHI) suggests that marketing power may exist in these fisheries, particularly in its harvesting and processing sectors, but less so in quota holdings. These concentration measures are only indicative of the possibility of market power. They do not establish that it actually exists.
    - Implementation of the method proposed by the Technical Group requires at least the following data: quota [share] ownership and control, processing volumes and capacity, size of the relevant market.
    - The method proposed by the Technical Group is based on the HHI, which means that evaluation of potential market power is consistent with what is done in other

industries. However, in order to apply the method, more data are needed along with a better understanding of the industry.

- The Technical Group should have paid more attention to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. This may be of greater concern than the monopoly problem.

2012

- The February 2012 Surfclam and Ocean Quahog Committee meeting discussed next steps for the then-numbered Amendment 15.
- At that meeting, GC Joel MacDonald advised that an information collection program could be implemented by NMFS without a Council FMP Amendment under authority granted in section 402(a) of the MSA.
- The Committee voted to split Amendment 15 into several parts: 1) move forward with cost recovery, EFH, and the ocean quahog biological reference point update in Amendment 15, 2) request that NMFS develop an information collection program, and 3) move development of an excessive shares cap to the next Amendment.

2013

- A "Data Collection Protocol" was developed for the Council to consider that would provide the data needed to understand quota share ownership and control of the quota allocations in the surfclam and ocean quahog fisheries.
- The Council approved the "Data Collection Protocol."

2015

- The data collection protocol was implemented.

2016

- Ownership data collection began in 2016.

2017

- An FMAT was reformed to work on the Excessive Shares Amendment.

2018

- June 2018: Range of alternatives developed and presented to the Surfclam and Ocean Quahog Committee and Council.

2019

- March 2019: Surfclam and Ocean Quahog Advisory Panel and Committee provided feedback on the public hearing document.
- April 2019: Council reviewed public hearing document and instructed FMAT to make some modifications to the document and bring it back to the Committee for review.

5.0 MANAGEMENT ALTERNATIVES

This amendment considers a range of alternatives to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. This amendment also considers requirements for the periodic review of implemented excessive shares cap level. Lastly, this action considers revisions to the process for specifying multi-year management measures, and future framework actions to make modifications to the excessive shares cap level.

In recognition of the diversity of potential solutions to these goals, a range of possible options for management measures ("alternatives") were developed for consideration. This approach complies with the statutory requirements of the NEPA to include a "range of alternatives" when evaluating the environmental impacts of federal actions. Section 5.1 describes the excessive shares cap alternatives, section 5.2 describes the periodic excessive shares review alternatives, section 5.3 describes the framework alternatives, and section 5.4 describes multi-year management measures alternatives. In addition, several alternatives were considered by the Council and rejected for further analysis. These "considered but rejected" alternatives are described in section 5.5. The complete analyses of the biological, economic, and social impacts of the alternatives is presented in section 7.0 of this document.

Comprehensive descriptions of the current regulations for surfclam and ocean quahog as detailed in the Code of Federal Regulations (CFR) are available here: http://www.greateratlantic.fisheries.noaa.gov/regs/fr.html.

5.1 Excessive Shares Cap Alternatives

The Council is required to define measurable criteria for what constitutes an excessive share in the Atlantic surfclam and ocean quahog ITQ privileges, to ensure the FMP is compliant with the MSA (see section 4.1 for additional information).

None of the alternatives under consideration would result in the need for an individual, entity, or corporation to divest. Therefore, this document does not describe specific divestment mechanisms. When implemented, NMFS would disapprove transactions that would be in excess of the Council's selected excessive shares cap level.

The Compass Lexecon Report and associated Center for Independent Experts (CIE) review indicated a need for reliable information regarding both quota share ownership, and control of the quota by tracking the transfer and possession of cage tags in the surfclam and ocean quahog fisheries, to implement an excessive shares definition. Information showing detailed quota transfers and ownership relationships among final quota holders is important in assessing quota share ownership and control (Mitchell et al., 2011, Walden 2011).

Participants in these fisheries have reported that there are various types of transactions involving cage tags that commonly occur, including cage tag transfers, long-term leases (e.g., five years or more), transfers of cage tags from bank lenders, and between both related and unrelated business

entities. As such, it is important to consider these complex contracting and business practices that occur in these fisheries. Furthermore, as indicated in the Compass Lexecon Report:

> *"The need for harvesters to hold quota at the time of harvesting raises further complications: some harvesters own or contract for their own quota, whereas in other cases processors obtain quota and transfer it without charge to their harvesters (which may be [either] affiliated or independent). When the processor owns quota or contracts for quota on behalf of a harvester, the transfer data will show the quota has been transferred to a harvester, but will not show whether the processor retains control of the quota in such transactions ("control" in this context means the power to decide whether the quota will be used to harvest clams). A complete understanding of the actual ownership and control of quota requires analysis of the contracts under which quota were transferred to the final owner or holder. An additional problem arises from the reporting of quota when used. The owner of quota is supposed to report to NMFS the specific tags (quota) that are used throughout the season. However, in many instances, it is not the recorded owner but another entity that reports the quota used. This is most likely a problem with related entities reporting the use of quota, which is another aspect of determining final quota ownership or control"* (Mitchell et al. 2011).

The Atlantic Surfclam and Ocean Quahog Information Collection Program was designed to collect information to assess quota share ownership, and control of the quota by tracking the transfer of cage tags in the surfclam and ocean quahog fisheries. Some industry members reported they would not disclose specific details on long-term leases on those data collection forms,[17] as they see it as a confidential business practice.

The ownership data collected for 2016 and 2017 includes very limited information on short and long-term leases, which suggests a lack of interest by industry members in reporting this information. Because of the lack of data to assess control from the context of tracking all long or short term leases, "control" is defined as the possession of the cage tags during the fishing year, which is the power to decide if they will be used to harvest clams.[18]

5.1.1 Alternative 1: No Action/*Status Quo*

Under the no action alternative for excessive shares (alternative 1), the current management approach regarding excessive shares (i.e., share accumulation) would continue. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. The FMP would rely only on federal anti-trust provisions.

[17] Long-term contracts.

[18] In the scallop fishery, a similar concept is used to tabulate quota accumulation levels within the fishing year, that is, "if you touch it" (hold the tags during the year), you have the ability to make decisions about whether those tags are used to land clams or not.

5.1.2 Alternative 2: Single Cap – Quota share ownership cap-only, with unlimited possession of cage tags allowed during the fishing year)

Under alternative 2, a single quota share cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership with unlimited possession of cage tags[19] throughout the year.[20] Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit.

This alternative allows leasing and other complex contracting and business practices (involving cage tag transfers) to continue without imposing a limit on the possession of cage tags during the fishing year; a limit would only be placed on quota share ownership. Essentially, these complex practices would be allowed to proceed without oversight.

Note: The Council needs to choose a specific affiliate level (individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and/or monitor any particular excessive shares cap level.[21]

5.1.2.1 Sub-Alternative 2.1: Quota share ownership cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 2.1, the single quota share caps would be based on the highest level of quota share held by an individual or entity reported in the ownership data[22] for each fishery (surfclams and ocean quahogs) for the 2016-2017 period,[23] as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. Specific maximum values for various models and level of analysis (i.e., affiliate levels) are presented in Tables 2 and 3.[24] The caps based on ownership data from 2016 to 2017 would be:

For surfclams –

- Option A: At the individual/business level, the quota share cap would be 28% under all models
- Option B: At the family level, the quota share cap would be 28% under all models
- Option C: At the corporate officer level, the quota share cap would be 28% under all models

[19] There would be no limit on how many cage tags an individual or entity could possess (from initial tag allocation or transfer of tags) during the fishing year; therefore one entity could potentially possess up to 100% of the tags.
[20] All excessive share alternatives are applicable throughout the year.
[21] See Definitions and Terminology at the end of Section 2.0 for more information on these choices. More detailed information on these choices is also found in section 7.0.
[22] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."
[23] On average, for the 2016-2017 period, 67% of the surfclam quota and 58% of the ocean quahog quota were landed (see Table 4 in section 6.0).
[24] Note that the values in Tables 2 and 3 were rounded up for the monitoring process (e.g., 27.3 was rounded up to 28 and 27.7 was also rounded up to 28). These values were only rounded up because rounding down could potentially result in an existing entity being over the cap merely because of the rounding approach.

For ocean quahogs –

- Option A: At the individual/business level, the quota share cap would be 22% under all models
- Option B: At the family level, the quota share cap would be 22% under all models
- Option C: At the corporate officer level, the quota share cap would be 22% under all models

If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in the fisheries (i.e., 28%, 28%, 28%, and 16%). If fully consolidated, a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in the fisheries (i.e., 22%, 22%, 22%, 22%, and 12%).[25] The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.2.2 Sub-Alternative 2.2: Quota share ownership cap at 49%

Under sub-alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share plus the transfer/leasing of annual allocation within the fishing year. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.2.3 Sub-Alternative 2.3: Quota share ownership cap at 95%

Under sub-alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative was recommended for inclusion by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this quota share cap.

[25] The resulting number of minimum entities under excessive shares cap alternatives 2 through 4 assume that market demand equals supply. When this is not the case, the leasing market could be disrupted (because available quota is larger than product demand) which could result in smaller firms or entities not associated with a processor being driven out of business. In addition, it is also possible that under all alternatives evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

Table 2. Surfclam maximum quota share ownership and maximum cage tag possession level at the individual/business level, family level, and corporate officer level for various data tabulation models, 2016-2017.

Surfclam Values							
Ownership Percentage Model		**Affiliation Levels**					
		Individual / Business Level		**Family Level** (individual / business level + family level)		**Corporate Officer Level** (individual / business level + family level + corporate officer level)	
		2016	**2017**	**2016**	**2017**	**2016**	**2017**
Net Actual Percentage	Owned quota share	28	28	28	28	28	28
	Max cage tag possession	28	28	33	33	44	43
Cumulative 100%	Owned	28	28	28	28	28	28
	Max cage tag possession	48	46	49	47	49	47

Terminology

1) Net Actual Percentage Model - Each owner's share in a business is used to determine the percentage of business ownership in that business's owned quota share or in the percentage of issued tags. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

2) Cumulative 100% Model - Any ownership interest in a quota share or ownership of cage tags by an individual or business is calculated as 100% of that quota share. When calculated, the credits/inputs (initial cage tag allocation and tag transfers in) accrue over the year for each person; debits/outputs (sale of quota share and tag transfers out) are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels: *Individual/Business Level -* Smallest unit at the individual level or business (if an individual owner cannot be identified); ***Family Level -*** Includes any family associations that are not already accounted at the individual business level; and ***Corporate Officer Level -*** Includes association through corporate officer's that are not accounted for in the other levels.

Source: Analysis and Program Support Division, Greater Atlantic Regional Fisheries Office (GARFO).

Table 3. Ocean quahog maximum quota ownership and maximum cage tag possession level at the individual/business level, family level, and corporate officer level for various data tabulation models, 2016-2017.

Ocean Quahog Values							
Ownership Percentage Model		**Affiliation Levels**					
		Individual / Business Level		**Family Level** (individual / business level + family level)		**Corporate Officer Level** (individual / business level + family level + corporate officer level)	
		2016	**2017**	**2016**	**2017**	**2016**	**2017**
Net Actual Percentage	Owned quota share	22	22	22	22	22	22
	Max cage tag possession	29	25	29	28	37	39
Cumulative 100%	Owned quota share	22	22	22	22	22	22
	Max cage tag possession	38	41	38	41	38	41

Terminology

1) Net Actual Percentage Model - Each owner's share in a business is used to determine the percentage of business ownership in that business's owned quota share or in the percentage of issued tags. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

2) Cumulative 100% Model - Any ownership interest in a quota share or ownership of cage tags by an individual or business is calculated as 100% of that quota share. When calculated, the credits/inputs (initial cage tag allocation and tag transfers in) accrue over the year for each person; debits/outputs (sale of quota share and tag transfers out) are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels: *Individual/Business Level -* Smallest unit at the individual level or business (if an individual owner cannot be identified); ***Family Level -*** Includes any family associations that are not already accounted at the individual business level; and ***Corporate Officer Level -*** Includes association through corporate officer's that are not accounted for in the other levels.

Source: Analysis and Program Support Division, Greater Atlantic Regional Fisheries Office (GARFO).

5.1.3 Alternative 3: Quota Share and Cage Tag Cap – A single cap for quota share and cage tags

Under alternative 3, a percent cap that applies to both quota share and the possession of cage tags would be established separately for surfclams and ocean quahogs. Since the cap under this alternative is based on the possession of cage tags that are from initial annual allocation and transferred, it accounts for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags)[26] that are prevalent in the fisheries when setting the cap limit.

5.1.3.1 Sub-Alternative 3.1: Quota share and cage tag cap based on highest level of tag possession in the data, 2016-2017

Under sub-alternative 3.1, the caps would be based on the highest level of possession of both initially allocated and transferred cage tags by an individual or entity reported in the ownership[27] and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period, as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The caps under this alternative would depend on the determination of amounts of tags possessed under the cumulative 100% model or net actual percentage model and affiliate level (individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (i.e., affiliate levels) are presented in Tables 2 and 3. The caps are based on ownership and transfer data from 2016 to 2017 under this sub-alternative would be:

For surfclams -

- Option A: At the **individual/business level**, the cap would be:
  - 28% under the net actual percentage model
  - 48% under the cumulative 100% model
- Option B: At the **family level**, the cap would be:
  - 33% under the net actual percentage model
  - 49% under the cumulative 100% model
- Option C: At the **corporate officer level**, the cap would be:
  - 44% under the net actual percentage model
  - 49% under the cumulative 100% model

For ocean quahogs -

- Option A: At the **individual/business level**, the cap would be:
  - 29% under the net actual percentage model
  - 41% under the cumulative 100% model
- Option B: At the **family level**, the cap would be:

[26] The Compass Lexecon Report and CIE review indicated a need for reliable information regarding both quota share ownership and control of quota in the surfclam and ocean quahog fisheries, to implement an excessive shares definition. Information showing detailed quota transfers and ownership relationships among final quota holders is important in assessing quota share ownership and control (Mitchell et al., 2011, Walden 2011).

[27] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

- 29% under the net actual percentage model
- 41% under the cumulative 100% model

- Option C: At the **corporate officer level**, the cap would be:
  - 39% under the net actual percentage model
  - 41% under the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.3.2 Sub-Alternative 3.2: Quota share and cage tag cap at 40%

Under sub-alternative 3.2, the cap on quota share and the possession of both initially allocated and transferred cage tags by an individual or entity would be 40% for surfclams and 40% for ocean quahogs. This is based the "Rule of Three" notion (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.3.3 Sub-Alternative 3.3: Cap at 49%

Under sub-alternative 3.3, the cap on quota share and the possession of both initially allocated and transferred cage tags by an individual or entity would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share of the total allowable landings. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.4 Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a higher cap on cage tags

Under alternative 4, a two-part cap approach would be implemented for each surfclams and ocean quahogs, with the first part being a cap on quota share ownership, and a second, higher cap on the possession of both initially allocated and transferred cage tags by an individual or entity. This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Because

alternative 4 is based on a two-part cap approach that limits the possession of both owned quota share and cage tags by an individual or entity, it would limit the exercise of market power that could be derived through both quota share ownership and contractual control of quota, and it accounts for transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that occur in these fisheries**.**

5.1.4.1 Sub-Alternative 4.1: Two-part cap based on highest level in the ownership and transfer data, 2016-2017

Under sub-alternative 4.1, the two-part cap approach includes one cap on quota share ownership and a second cap on the possession of cage tags by an individual or entity based on the highest levels reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period, as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (i.e., affiliate levels) are presented in Tables 2 and 3. The two-part caps based on ownership and transfer data from 2016 to 2017 would be:

For surfclams -

- Option A: At the **individual/business level**, the cap would be:
  - 28% quota share ownership / 28% cage tag possession under the net actual percentage model
  - 28% quota share ownership / 48% cage tag possession under the cumulative 100% model
- Option B: At the **family level**, the cap would be:
  - 28% quota share ownership / 33% cage tag possession under the net actual percentage model
  - 28% quota share ownership / 49% cage tag possession under the cumulative 100% model
- Option C: At the **corporate officer level**, the cap would be:
  - 28% quota share ownership / 44% cage tag possession under the net actual percentage model
  - 28% quota share ownership / 49% cage tag possession the cumulative 100% model

For ocean quahogs -

- Option A: At the **individual/business level**, the cap would be:
  - 22% quota share ownership / 29% cage tag possession under the net actual percentage model
  - 22% quota share ownership / 41% cage tag possession under the cumulative 100% model
- Option B: At the **family level**, the cap would be:
  - 22% quota share ownership / 29% cage tag possession under the net actual percentage model

- 22% quota share ownership / 41% cage tag possession under the cumulative 100% model

- Option C: At the **corporate officer level**, the cap would be:
  - 22% quota share ownership / 39% cage tag possession under the net actual percentage model
  - 22% quota share ownership / 41% cage tag possession the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.4.2 Sub-Alternative 4.2: Two-part cap based on highest level in the ownership and transfer data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation

Under sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership and transfer data for 2016-2017 to allow for additional consolidation (Tables 2 and 3). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. As with sub-alternative 4.1, the two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (i.e., affiliate levels) are presented in Tables 2 and 3. The two-part caps based on ownership and transfer data from 2016 to 2017 would be:

(*Note: these values were calculated by adding 15% for anticipated growth to the values presented under sub-alternative 4.1*)

For surfclams -

- Option A: At the **individual/business level**, the cap would be:
  - 43% quota share ownership / 43% cage tag possession under the net actual percentage model
  - 43% quota share ownership / 63% cage tag possession under the cumulative 100% model
- Option B: At the **family level**, the cap would be:
  - 43% quota share ownership / 48% cage tag possession under the net actual percentage model
  - 43% quota share ownership / 64% cage tag possession under the cumulative 100% model
- Option C: At the **corporate officer level**, the cap would be:

- 43% quota share ownership / 59% cage tag possession under the net actual percentage model
- 43% quota share ownership / 64% cage tag possession under the cumulative 100% model

For ocean quahogs -

- Option A: At the **individual/business level**, the cap would be:
  - 37% quota share ownership / 44% cage tag possession under the net actual percentage model
  - 37% quota share ownership / 56% cage tag possession under the cumulative 100% model
- Option B: At the **family level**, the cap would be:
  - 37% quota share ownership / 44% cage tag possession under the net actual percentage model
  - 37% quota share ownership / 56% cage tag possession under the cumulative 100% model
- Option C: At the **corporate officer level**, the cap would be:
  - 37% quota share ownership / 54% cage tag possession under the net actual percentage model
  - 37% quota share ownership / 56% cage tag possession under the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.4.3 Sub-Alternative 4.3: Two part cap - quota share ownership cap at 30% and cage tag cap at 60%

Under sub-Alternative 4.3, the quota share ownership cap would be 30% and the cap on cage tags would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. This alternative could potentially result in a minimum of four entities (if fully consolidated) participating in the fisheries (i.e., four large entities at 30%, 30%, 30%, and 10% quota share ownership cap). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.4.4 Sub-Alternative 4.4: Two part-cap - Quota share ownership cap and cage tag cap; Surfclams: 35/65% and Ocean quahogs: 40/70%

The Surfclam and Ocean Quahog Committee met on September 17, 2019 to review and provide input on the public hearing comments from the Excessive Shares Amendment received during the August 1 – September 14, 2019 public comment period. After reviewing the public comments, the

Surfclam and Ocean Quahog Committee passed a motion to add sub-alternative 4.4 to the range of excessive shares cap alternatives for consideration for the following reasons: 1) the cap values under sub-alternative 4.4 are a slight modification from the values presented under sub-alternative 4.3, 2) the cap values under sub-alternative 4.4 represent a "compromise alternative" (according to most public comments received) that would meet the Amendment objective of setting excessive shares cap levels for these fisheries, 3) these cap values would allow for some expansion (further consolidation) given the current ownership levels in the fisheries if needed, 4) industry indicated during public hearings there are currently two plants processing ocean quahogs.

5.1.5 Alternative 5: Quota share ownership cap-only at 40%with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota

Under alternative 5, the quota share cap would be 40% for surfclams and 40% for ocean quahogs with unlimited possession of cage tags allowed during the fishing year, plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the annual catch target (ACT) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

Since the cap under this alternative is based on ownership of quota shares only, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing and other complex contracting and business practices (involving cage tag transfers) to continue without imposing a limit on the possession of cage tags during the fishing year; a limit would only be placed on quota share ownership. Essentially, these complex practices would be allowed to proceed without oversight.

The 40% cap under this alternative is based on the "Rule of Three" notion (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011).

This alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). The FMAT noted that the "two-part system" (i.e., cap on quota share ownership, unlimited possession of cage tags, plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of Quota A and Quota B shares is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. Lastly, this alternative could potentially result in a minimum of three large entities (if fully consolidated) participating in the fisheries (i.e., 40%, 40%, and 20%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

Box 5.1.5 below shows a hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work the first year of implementation (year 4) for surfclams and ocean quahogs. In this example, the same overall quota levels that have been in place for surfclams and ocean quahogs for the past 15 years are used in year 4. In addition, under this example a 3-year average (for years 1-3) is used to derive Quota A shares for year 4. The difference between the overall ACT level and Quota A shares for year 4 is used to determine the Quota B shares level for that year.

As shown in Box 5.1.5, the overall quota allocated to each fishery in bushels or number of issued cage tags do not change in year 4 when compared to prior years. However, while in years 1-3, the overall number of cage tags issued to each fishery (i.e., corresponding to the quota for each fishery; 106,250 cage tags for surfclams and 166,656 cage tags for ocean quahogs) would be released at the onset of the fishing year, under this alternative, only the Quota A shares and associated number of cage tags for that quota would be released at the onset of the fishing year and Quota B shares would be released when Quota A shares are used/exhausted.[28] As an example, for surfclams, Quota A shares, 2.352 million bushels or 73,500 cage tags would be released at the beginning on the fishing year 4, when this quota and associated number of cage tags have been used, then Quota B shares of 1.048 million bushels or 32,750 cage tags would be released that same fishing year (year 4). While under this alternative, the release of the quota (and associated cage tags) is split into two components (Quota A shares and Quota B shares), the overall quota level and number of cage tags available during the entire fishing year 4 is identical to that from prior fishing years (years 1-3).

Box 5.1.5. Hypothetical derivation of Quota A shares and Quota B shares (and cage tags) for surfclams and ocean quahogs under alternatives 5 and 6.

Year	Quota Million bushels	Landings Million bushels	Quota A shares Million bushels	Quota B shares Million bushels
Atlantic surfclams				
1	3.400 (106,250 cage tags)	2.364 (73,875 cage tags)	NA	NA
2	3.400 (106,250 cage tags)	2.354 (73,563 cage tags)	NA	NA
3	3.400 (106,250 cage tags)	2.339 (73,094 cage tags)	NA	NA
4	3.400 (106,250 cage tags)	NA	2.352 (73,500 cage tags)	1.048 (32,750 cage tags)
Ocean quahogs				
1	5.333 (166,656 cage tags)	3.196 (99,875 cage tags)	NA	NA
2	5.333 (166,656 cage tags)	3.007 (93,968 cage tags)	NA	NA
3	5.333 (166,656 cage tags)	3.075 (96,094 cage tags)	NA	NA
4	5.333 (166,656 cage tags)	NA	3.093 (96,656 cage tags)	2.240 (70,000 cage tags)

NA = not applicable or not available.

[28] If this alternative is implemented, NMFS will have to determine how to release Quota B shares to allocation holders at the time the B shares are released.

5.1.6 Alternative 6: Quota share ownership cap-only at 49% with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota

Under alternative 6, the cap would be 49% for surfclams and 49% for ocean quahogs with unlimited possession of cage tags allowed during the fishing year plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share plus the transfer/leasing of quota share allocation within the fishing year.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing and other complex contracting and business practices (involving cage tag transfers) to continue without imposing a limit on the possession of cage tags during the fishing year; a limit would only be placed on quota share ownership. Essentially, these complex practices would be allowed to proceed without oversight.

The two-tier quota under this alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

The FMAT noted that the "two-part system" (i.e., cap on quota share ownership, unlimited possession of cage tags, plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of Quota A and Quota B shares is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. Lastly, this alternative could potentially result in a minimum of three entities (if fully consolidated) participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

For a hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work for surfclams and ocean quahogs see section 5.1.5 above.

5.2 Excessive Shares Review Alternatives

5.2.1 Alternative 1: No Action/*Status Quo* (Review Process)

Under the no action alternative for excessive shares review (alternative 1), there would not be a requirement for periodic review of implemented excessive shares measures.

5.2.2 Alternative 2: Require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed

Allowing for a periodic review of excessive shares measures that the Council adopts would permit the Council to revise these measures if conditions in the fisheries change over time. Conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure or specific measures established at an appropriate level now could over time become inefficiently high or low.

In order to facilitate any necessary modifications to the cap levels, the Council could recommend adding modification of the excessive shares cap level to the list of management actions that could be implemented via the framework adjustment process (alternative 5.3). However, if major changes to the overall excessive shares measures are needed, an amendment process will likely be needed.

This alternative would provide an enforceable provision for regular review and evaluation of the performance of the cap for the surfclam and ocean quahog ITQ fisheries. However, this alternative does not preclude the Council reviewing any implemented excessive shares measures before the official review time period (i.e., 10 year review period).

5.3 Framework Adjustment Process Alternatives

A framework is an action that adjusts measures that are within the scope and criteria established by the FMP within a range as defined and analyzed in the FMP. Amendment 12 to the Surfclam and Ocean Quahog FMP implemented a framework adjustment process that allows management measures to be added or modified through this streamline public process (MAFMC 1998b). The range of frameworkable management measure were subsequently revised in Amendment 16 to the FMP (MAFMC 2011). The list of possible management measures to be addressed via the framework adjustment process included in the FMP include (50 CFR §648.79):

- Adjustments within existing ABC control rule levels
- Adjustments to the existing MAFMC risk policy
- Introduction of new AMs, including sub-ACTs
- Description and identification of EFH (and fishing gear management measures that impact EFH)
- Habitat areas of particular concern
- Set-aside quota for scientific research
- VMS
- Suspension or adjustment of the surfclam minimum size limit

Frameworks typically take a minimum of 1-year to be completed; with a minimum of two framework meetings and approximately 4-6 months for rulemaking and implementation. Adding measures as frameworkable under the FMP in order to address potential future changes may provide for efficiencies in the process.

5.3.1 Alternative 1: No Action/*Status Quo* (Framework Adjustment)

Under the no action alternative (alternative 1), the list of management measures that have been identified in the FMP that could be implemented or adjusted via the framework adjustment process would remain unmodified.

5.3.2 Alternative 2: Add excessive shares cap level to the list of measures to be adjusted via framework

This alternative would expand of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level.

This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap), only if the modification would not result in an entity having to divest. Including this measure would provide flexibility to managers to make changes to the caps in a timely manner. The impacts of any future framework action related to the excessive cap level would be analyzed through a separate action, which would include public comment opportunities and documentation of compliance with all applicable laws.

5.4 Multi-Year Management Measures Alternatives

Surfclam and ocean quahog regulations allow multi-year annual quota specification to be set for up to 3 years at a time (CFR §648.71 and 648.72). Therefore, current regulations allow, but do not obligate the Council to specify commercial quotas and other management measure for up to 3 years. Multi-year regulations have been implemented for all fisheries managed by the MAFMC to relieve administrative demands on the Council and NMFS imposed by annual specification requirements. Longer term specifications provide greater regulatory consistency and predictability to the fishing sectors.

Specifications of annual quotas are prepared in the final year of the quota period, unless there is a need for an interim quota modification. It is also stipulated in the regulations that on an annual basis, the MAFMC staff produce and provide to the Council an Atlantic surfclam and ocean quahog annual quota recommendation paper based on the ABC recommendation of the Scientific and Statistical Committee (SSC), the latest available stock assessment report prepared by NMFS, data reported by harvesters and processors, and other relevant data. Based on that report, and at least once prior to August 15 of the year in which a multi-year annual quota specification expires, the MAFMC, following an opportunity for public comment, will recommend to the Regional Administrator annual quotas and other management measures.

5.4.1 Alternative 1: No Action/*Status Quo* (Multi-Year Measures)

Under this no action alternative for multi-year management measures (alternative 1), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years.

Regulations for the surfclam and ocean quahog specifications setting process at 50 CFR §648.72, stipulate that annual catch quotas can be established for up to a 3-year period. The specifications setting process is described in detail above.

5.4.2 Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule

Under alternative 2, specifications could be set for a period up to the maximum number of years consistent with the NRCC-approved stock assessment schedule.[29] This alternative would provide additional flexibility as specifications could be set until a new surfclam and/or ocean quahog stock assessment is produced. New specifications of annual quotas would be prepared in the final year of the quota period, unless there is a need for interim quota modifications. Council staff would coordinate with Northeast Fisheries Science Center (NEFSC) staff, during the first quarter of each year (during the multi-year specifications period) to assess whether there is any relevant information regarding these fisheries that need to be addressed or used to produce interim quota modifications. The results would be provided to the Council in a memorandum. In the year in which a multi-year annual quota specifications expire, Council staff would produce a fishery information document and specification recommendation memorandum (as is done for all the Council managed FMPs) to provide to the SSC and the Council.

Lastly, under the current regulations at §648.72, there is some terminology (or outdated regulatory language) that is no longer used when deriving catch and landings limits for these species (e.g., DAH or Domestic Annual Harvest; DAP or Domestic Annual Processing) that would be removed from the regulations under this alternative. In addition, the requirements for the contents of annual quota reports are not consistent with the current process for setting catch and landings limits based off the stock assessment (i.e., outdated terminology), therefore that language would be revised to reflect current practices for development of fishery information documents and recommendations memorandum.
None of the other existing catch and landings limits regulations, accountability measures, reporting requirements or ITQ system management procedures will change under alternative 2.

5.5 Alternatives Considered but Rejected from Further Analysis

Since the initiation of this amendment, the Council considered a range of different alternatives to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges corresponding to the purpose and need statements described in section 4.1. To address these need statements, the Council considered various approaches. Concepts or options that were discussed but rejected from further consideration, are

[29] For example, under the current schedule, new survey information will be available every 4 years for surfclams and every 6 years for ocean quahogs, after which a stock assessment may be conducted.

described below for joint ventures (section 5.5.1) and other excessive shares cap levels (5.5.2 and 5.5.3).

5.5.1 Allow for Joint Ventures in these fisheries

The surfclam and ocean quahog harvest levels have been well below the quota levels established for those fisheries for many years (see Table 4 in section 6.0). This alternative could allow for additional product to be sold and competition increased. For example, the FMAT initially discussed the possibility of joint ventures with foreign partners in which clams harvested by the United States fishermen could be delivered to foreign processing vessels in the EEZ. This alternative was considered but rejected by the Council for further analysis as it was deemed impractical for these fisheries (e.g., perishable nature of the product; ITQ system that requires cages to be landed with tags, etc.). In addition, some industry representatives indicated that they would not like to sell their clams to international companies competing with their interests.

5.5.2 Set the cap at a specific level. But allow for opportunity for further consolidation upon review by NMFS

Conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure or specific cap level established at an appropriate level now could over time become inefficiently high or low. This alternative would allow any entity or firm to request NMFS to review information (e.g., excessive shares cap level, market conditions, other relevant information) to assess if further consolidation (beyond any Council implemented excessive cap share level) was warranted for that entity or firm. This alternative was considered but rejected for further consideration as it would require a large amount of data to be provided by the industry; including confidential data on production costs, profitability, production capacity, etc. This information is not presently available to NMFS. In addition, this alternative would also require extensive review and analysis by the NEFSC Social Science Branch, making this approach impractical from the Council's perspective.

5.5.3 Use the seven steps on excessive shares proposal developed presented in the Compass Lexecon Report

The seven steps on the excessive shares proposal presented in the Compass Lexecon Report includes the use of the HHI, assessment of the breadth of the market, the scope and quantity of substitute products, the level of excess capacity, the degree of product heterogeneity, the relative bargaining power of buyers and sellers, the ability to price discriminate, ease of entry, and efficiencies -or economies of scale, the size of the fringe, and the sources of supply to processors (Mitchell et al. 2011, Walden 2011). However, the FMAT indicated that this methodology requires a large amount of quantitative information that is not currently available and would also require frequent revision of caps due to changes in market dynamics. Therefore, the Council determined that this approach is impractical.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The affected environment consists of those physical, biological, and human components of the environment expected to experience impacts if any of the actions considered in this document were to be implemented. This document focuses on four aspects of the affected environment, which are defined as valued ecosystem components (VECs).

The VECs include:

- Managed species (i.e., Atlantic surfclam and ocean quahog) and non-target species
- Physical habitat
- Protected species
- Human communities

The following sections describe the recent condition of the VECs.

6.1 Managed Resources and Non-Target Species

6.1.1 Description of the Fisheries

The management unit is all Atlantic surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) in the Atlantic EEZ. The commercial fisheries for surfclam and ocean quahog are fully described in the document titled, "Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council" (Northern Economics, Inc. 2019; http://www.mafmc.org/council-events/june-2019-council-meeting). Clam dredges (a bottom tending mobile gear) are utilized in the commercial fisheries for both species. An overview of commercial landings for both species is provided in Table 4 (in section 6.1.1.1.2 below). Information on recent fishing trends are summarized throughout section 6.0. Additional information on these fisheries can be found in Council meeting materials available at: http://www.mafmc.org.

6.1.1.1 Basic Biology

6.1.1.1.1 Atlantic Surfclam

Information on Atlantic surfclam biology can be found in the document titled, "Essential Fish Habitat Source Document: Surfclam, *Spisula solidissima*, Life History and Habitat Requirements" (Cargnelli et al. 1999a). An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh. Additional information on this species is available at the following website: http://www.fishwatch.gov. A summary of the basic biology is provided below.

Atlantic surfclams are distributed along the western North Atlantic Ocean from the southern Gulf of St. Lawrence to Cape Hatteras. Surfclams occur in both the state territorial waters (≤ 3 miles from shore) and within the EEZ (3-200 miles from shore). Commercial concentrations are found primarily off New Jersey, the Delmarva Peninsula, and on Georges Bank. In the Mid-Atlantic

region, surfclams are found from the intertidal zone to a depth of about 60 meters (197 ft), but densities are low at depths greater than 40 meters (131 ft).
The maximum size of surfclams is about 22.5 cm (8.9 inches) shell length, but surfclams larger than 20 cm (7.9 inches) are rare. The maximum age exceeds 30 years and surfclams of 15-20 years of age are common in many areas. Surfclams are capable of reproduction in their first year of life, although full maturity may not be reached until the second year. Eggs and sperm are shed directly into the water column. Recruitment to the bottom occurs after a planktonic larval period of about three weeks.

Atlantic surfclams are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of surfclams include certain species of crabs, sea stars, snails, and other crustaceans, as well as fish predators such cod and haddock.

6.1.1.1.2 Ocean Quahog

Information on ocean quahog biology can be found in the document titled, "Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Requirements" (Cargnelli et al. 1999b). An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh. Additional information on this species is available at the following website: http://www.fishwatch.gov. A summary of the basic biology is provided below.

The ocean quahog is a bivalve mollusk distributed in temperate and boreal waters on both sides of the North Atlantic Ocean. In the Northeast Atlantic, quahogs occur from Newfoundland to Cape Hatteras from depths of about 8 to 400 meters. Ocean quahogs further north occur closer to shore. The U.S. stock resource is almost entirely within the EEZ (3-200 miles from shore), outside of state waters, and at depths between 20 and 80 meters. However, in the northern range, ocean quahogs inhabit waters closer to shore, such that the state of Maine has a small commercial fishery which includes beds within the state's territorial sea (< 3 miles). Ocean quahogs burrow in a variety of substrates and are often associated with fine sand.

Ocean quahogs are one of the longest-living, slowest growing marine bivalves in the world. Under normal circumstances, they live to more than 100 years old. Ocean quahogs of the coast of the US have been aged well in excess of 200 years. Growth tends to slow after age 20, which corresponds to the size currently harvested by the industry (approximately 3 inches). Size and age at sexual maturity are variable and poorly known. Studies in Icelandic waters indicate that 10, 50, and 90 percent of female ocean quahogs were sexually mature at 40, 64 and 88 mm (1.5, 2.5 and 3.5 inches) shell length or approximately 2, 19 and 61 years of age. Spawning occurs over a protracted interval from summer through autumn. Free-floating larvae may drift far from their spawning location because they develop slowly and are planktonic for more than 30 days before settling. Major recruitment events appear to be separated by periods of decades.

Based on their growth, longevity and recruitment patterns, ocean quahogs are relatively unproductive and able to support only low levels of fishing. The current resource consists of individuals that accumulated over many decades.

Ocean quahogs are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of ocean quahogs include certain species of crabs, sea stars, and other crustaceans, as well as fish species such as sculpins, ocean pout, cod, and haddock.

Table 4. Federal Surfclam and Ocean Quahog Quotas and Landings: 1998 - 2020.

	Surfclam ('000 bu)			Ocean Quahog ('000 bu)		
Year	**Landings[a]**	**Quota**	**% Harvested**	**Landings[b]**	**Quota**	**% Harvested**
1998	2,365	2,565	92%	3,946	4,000	99%
1999	2,539	2,565	99%	3,832	4,500	85%
2000	2,566	2,565	100%	3,246	4,500	72%
2001	2,855	2,850	100%	3,763	4,500	84%
2002	3,113	3,135	99%	3,957	4,500	88%
2003	3,241	3,250	100%	4,148	4,500	92%
2004	3,138	3,400	92%	3,892	5,000	78%
2005	2,744	3,400	81%	3,006	5,333	56%
2006	3,057	3,400	90%	3,147	5,333	59%
2007	3,231	3,400	95%	3,431	5,333	64%
2008	2,919	3,400	86%	3,467	5,333	65%
2009	2,602	3,400	77%	3,463	5,333	65%
2010	2,332	3,400	69%	3,591	5,333	67%
2011	2,443	3,400	72%	3,160	5,333	59%
2012	2,341	3,400	69%	3,497	5,333	66%
2013	2,406	3,400	71%	3,245	5,333	61%
2014	2,364	3,400	70%	3,196	5,333	60%
2015	2,354	3,400	69%	3,007	5,333	56%
2016	2,339	3,400	69%	3,075	5,333	57%
2017	2,192[c]	3,400	64%[c]	3,172[c]	5,333	59%[c]
2018	NA	3,400	NA	NA	5,333	NA
2019	NA	3,400	NA	NA	5,333	NA
2020	NA	3,400	NA	NA	5,333	NA

[a] 1 surfclam bushel is approximately 17 lb. [b] 1 ocean quahog bushel is approximately 10 lb. [c] Preliminary, incomplete 2017 data. NA = Not yet available. Source: NMFS Clam Vessel Logbook Reports.

6.1.2 Description of the Stock (Including Status, Stock Characteristics, and Ecological Relationships)

Reports on stock status, including SAW/SARC (Stock Assessment Workshop/Stock Assessment Review Committee) reports, and assessment update reports are available online at the NOAA NEFSC website: http://www.nefsc.noaa.gov/. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

6.1.2.1 Atlantic Surfclam

The Atlantic surfclam stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 61 (SAW 61; NEFSC 2017a). A statistical catch at age and length model called Stock Synthesis was used. Reports on "Stock Status," including assessment and reference point updates, SAW reports, and SARC panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

New reference points were developed for SAW 61 which are more justified scientifically. The new biomass reference points and measures of stock biomass are ratios rather than absolute biomass in weight. This approach allows for conclusions about the status of the surfclam stock despite substantial uncertainty in the actual biomass of the stock (NEFSC 2017a).

The Atlantic surfclam stock was not overfished in 2015 (Figure 1; NEFSC 2017a). Based on recommended reference points for the whole stock which use spawning stock biomass (SSB), estimated $SSB_{2015}/SSB_{Threshold} = 2.54$ (probability overfished < 0.01). For surfclam, SSB is almost equal to total biomass. Trends expressed as the ratio $SSB/SSB_{Threshold}$ are more reliably estimated than SSB. For the whole stock, relative SSB ($SSB/SSB_{Threshold}$) declined during the last fifteen years but is still above the target.

Overfishing did not occur in 2015 (Figure 2; NEFSC 2017a). Based on new recommended reference points, estimated $F_{2015}/F_{Threshold} = 0.295$ (probability overfishing < 0.01). Trends expressed as the ratio $F/F_{Threshold}$ are more reliably estimated than absolute fishing mortality rates. For the whole stock the trend in relative F ($F/F_{Threshold}$) generally increased during the last fifteen years (despite recent declines in the south) but is still below the threshold.

Trends expressed as the ratio of recruitment (R) and mean recruitment in an unfished stock (R_0) are more reliably estimated than absolute recruitment (Figure 3; NEFSC 2016). The trend in relative recruitment is measured using the ratio R/R_0. Recruitment generally increased over the last decade, and in 2015 R/R_0 was 0.57 in the north, 0.97 in the south, and 0.75 for the stock as a whole, indicating recruitment in 2015 was about 57%, 97% and 75% of the maximum long-term average in the three regions. These recruitment patterns are probably normal in a surfclam stock at relatively high biomass and with low fishing mortality. Recruitment for the whole stock is measured as the geometric mean of R/R_0 in the northern and southern areas and is more uncertain than estimates for either area.

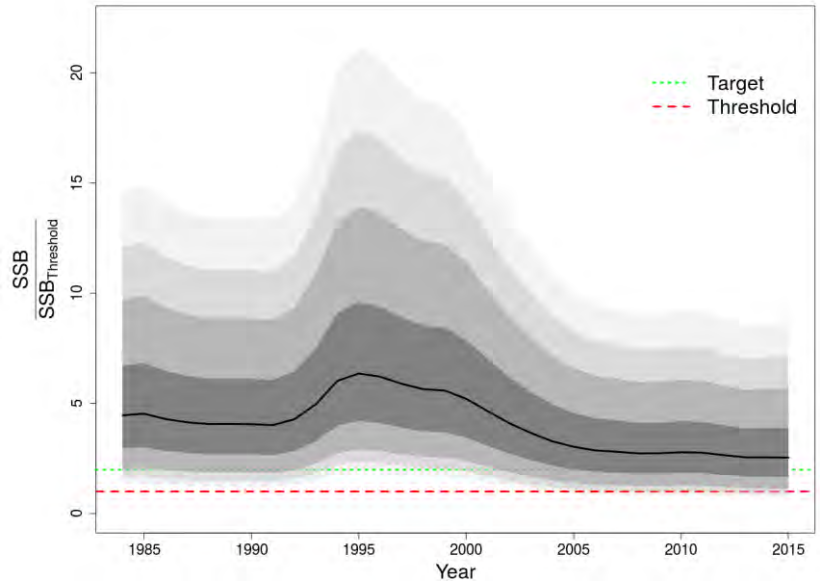


Figure 1. Trends in relative spawning stock biomass (SSB/SSB$_{Threshold}$) for the whole Atlantic surfclam stock during 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The green short-dash line at SSB/SSB$_{Threshold}$ = 2 is the management target. The red long-dash line at SSB/SSB$_{Threshold}$ = 1 is the level that defines an overfished stock* (NEFSC 2017a).

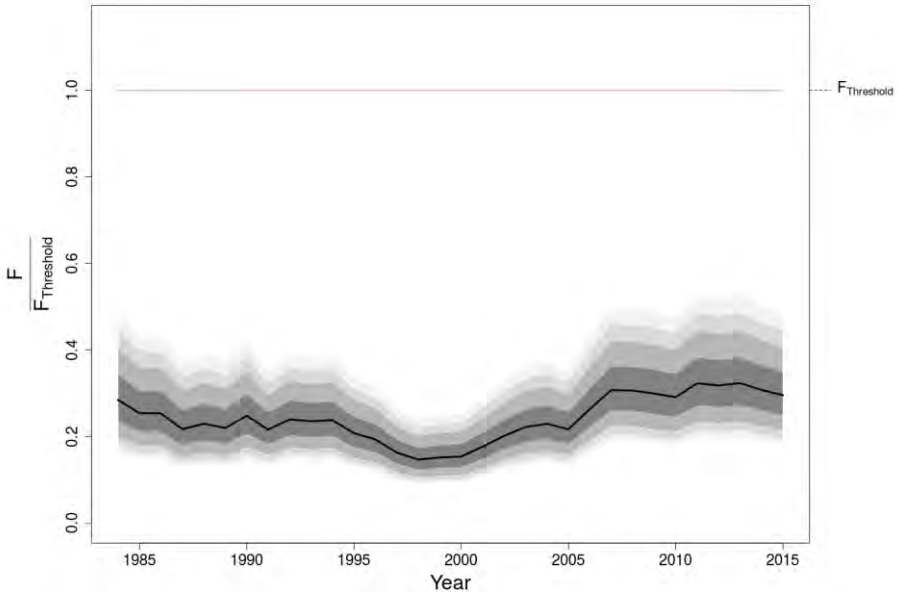


Figure 2. Trends in relative fishing mortality F/F$_{Threshold}$ for the whole Atlantic surfclam stock 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The solid line at F/F$_{Threshold}$ = 1 is the new fishing mortality threshold reference point* (NEFSC 2017a).

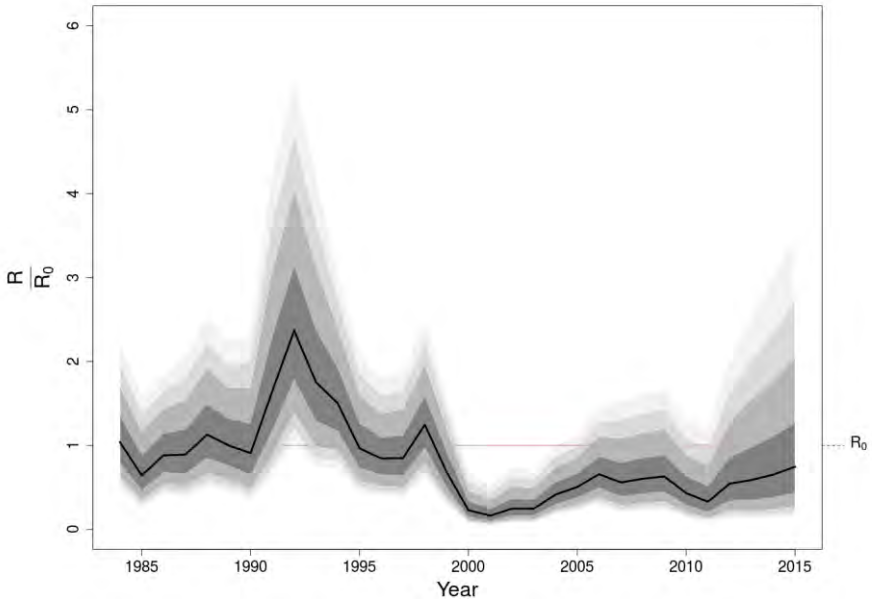


Figure 3. Trends in relative recruitment (R/R_0 for age zero recruits) for the whole Atlantic surfclam stock during 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The horizontal line is mean recruitment in an unfished stock* (NEFSC 2017a).

6.1.2.2 Ocean Quahog

The ocean quahog stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 63 (SAW 63; NEFSC 2017b). A statistical catch at length model called Stock Synthesis was used. Reports on "Stock Status," including assessment and reference point updates, SAW reports, and SARC panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

The ocean quahog was not overfished in 2016 (Figure 4; NEFSC 2017b). Based on SAW 63 reference points from the 2017 assessment for the stock, estimated $SSB_{2016}/SSB_{Threshold} = 2.04$ (probability overfished < 0.01), where SSB is spawning stock biomass.

Overfishing did not occur in 2016 (Figure 5; NEFSC 2017b). Based on SAW 63 reference points, estimated $F_{2016/FThreshold} = 0.246$ (probability overfishing < 0.01), where F is fishing mortality rate.

There is little information about annual recruitment variability for ocean quahog. Model estimated recruitment has been stable and near unfished recruitment levels since 2000 (NEFSC 2017b).

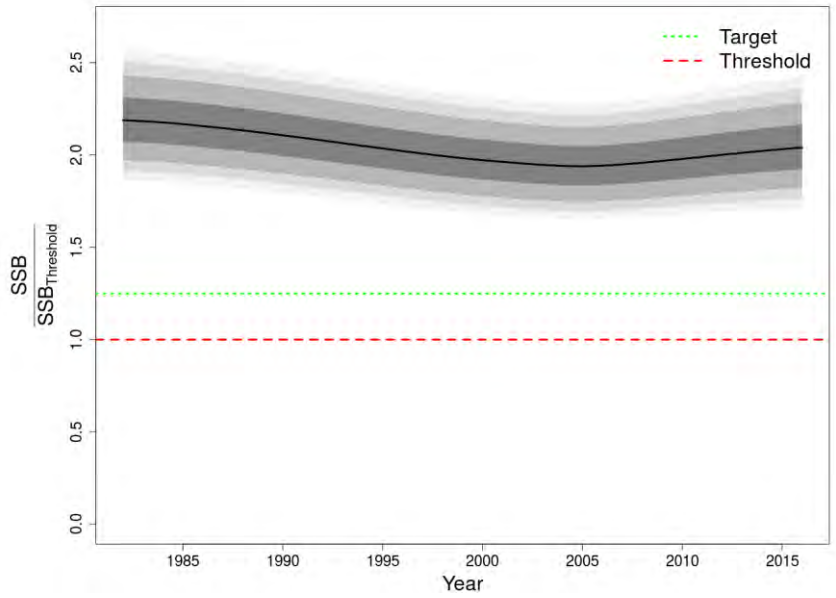


Figure 4. Trends in relative spawning stock biomass (SSB/SSB$_{Threshold}$) for the whole ocean quahog stock during 1982-2016. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The green short-dash line at SSB/SSB$_{Threshold}$ = 1.25 is the management target. The red long-dash line at SSB/SSB$_{Threshold}$ = 1 is the level that defines an overfished stock* (NEFSC 2017b).

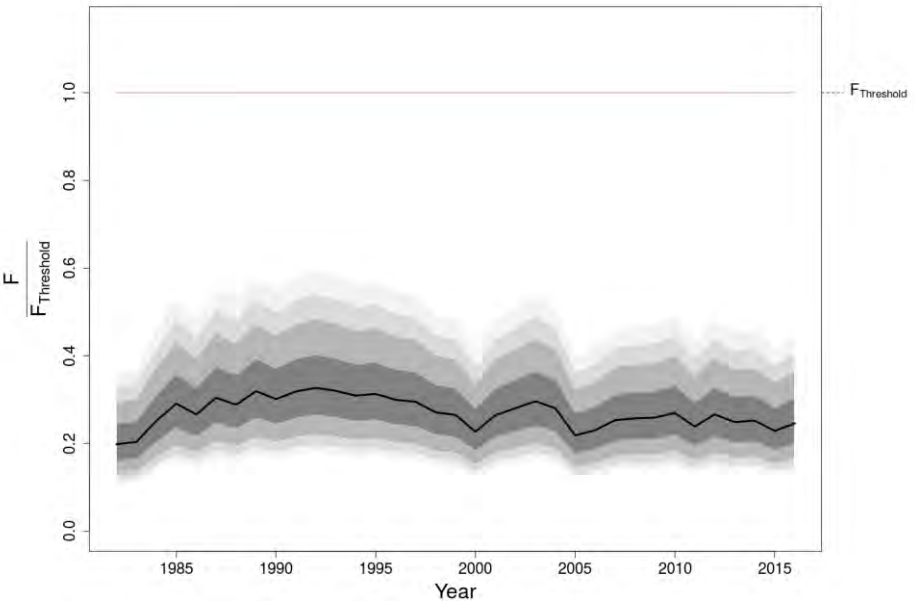


Figure 5. Trends in relative fishing mortality F/F$_{Threshold}$ for ocean quahog stock 1982-2016. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The solid line at F/F$_{Threshold}$ = 1 is the new fishing mortality threshold reference point* (NEFSC 2017b).

6.1.3 Non-Target Species

Non-target species are those species caught incidentally while targeting other species. Non-target species may be retained or discarded.

The estimated bycatch of non-targeted species by the surfclam and ocean quahog fisheries based on observer data from 2016 was provided by Toni Chute (Personal Communication, November 15, 2017).

There were 15 observed ocean quahog trips (out of a total of 957 trips, so 1.6% of trips were observed) and 28 observed surfclam trips (out of a total of 2,414, so 1.2% percent of trips were observed) in 2016. All species or species categories caught in the dredge, brought on board, and noted and weighed by observers during normal dredging operations are listed in Tables 5 and 6. For the 2016 observed hauls, the protocol for the observers was to stand along the conveyor belt after the catch had passed over the shaker table and move non-target species from the belt into baskets for weight. Bycatch types that were not informative (such as "invertebrate, unclassified") or inanimate (shell, debris) are not shown. The dominant bycatch species include sea scallops, skates, monkfish, stargazers, crabs, and snails. The surfclam fishery also discards ocean quahogs, and the ocean quahog fishery discards surfclams.

Table 7 shows estimates of total fisheries bycatch/discard in 2016 based on the observer data. The weight of each species caught during observed hauls (including the target species) was totaled, then the amount of each non-targeted species was divided by the amount of target species caught, converted to meat weights, to determine a discard/kept (d/k) ratio for that species. Non-targeted species that were kept in small amounts (usually scallops, monkfish, and flatfish) were treated as discard for the purpose of estimating total bycatch. The d/k ratio for each bycatch species was then multiplied by the total landings of the target species in 2016 in meat weights to estimate bycatch. For example, if the catch from observed surfclam trips totaled 100 tons of surfclam meats and 1 ton of scallops, the calculated d/k ratio for scallops based on observer data would be 0.01 or 1/100. If the surfclam fishery for that year landed 1,000 tons of surfclam meats, then 1,000 tons multiplied by the d/k ratio of 0.01 for scallops estimates that about 10 tons of scallops were caught and discarded by the surfclam fishery. Only the amount of bycatch was estimated - no assumptions were made about discard mortality or incidental mortality. Bycatch species that were estimated to be less than 100 pounds in total over the year are not shown.

It is important to note that specific bycatch types were highly variable. A few hauls where a significant weight of a certain bycatch species was caught influence the annual estimates. Using mean catch per trip of all the bycatch species overestimates total bycatch by assuming all the species are caught in every trip. Tables 8 and 9 list the amounts and types of bycatch reported from individual trips to show variability between trips.

Lastly, there were small quantities of ocean quahogs caught in observed surfclam trips and vice versa. In all, ocean quahogs contributed with 0.65% of the total catch on observed surfclam trips and surfclams contributed with 0.48% of the total catch on observed ocean quahog trips.

Table 5. Total weights of species caught during all observed ocean quahog hauls in 2016, and their percentage of both total catch and un-targeted catch.

Ocean quahog fishery			
Number of observed trips	15		
Number of observed hauls	370		
Species caught	**Weight (lbs)**	**% of total catch**	**% of un-targeted catch**
Ocean quahog (round weight)	2,629,292	98.53	
Surfclam (round weight)	12,827	0.48	32.77
Sea scallop	11,612	0.44	29.67
Little skate	6,816	0.26	17.42
Monkfish	3,121	0.12	7.98
Mussel, unclassified	829	0.03	2.12
Winter skate	741	0.03	1.89
Spiny dogfish	656	0.02	1.68
Snail, unclassified	617	0.02	1.58
Striped sea robin	228	0.01	0.58
Summer flounder	189	0.01	0.48
Horseshoe crab	176	0.01	0.45
Cancer crab, unclassified	171	0.01	0.44
Rock crab	167	0.01	0.43
Jonah crab	163	0.01	0.42
Worm, unclassified	161	0.01	0.41
Skate, unclassified	131	0.005	0.34
Crab, unclassified	110	0.004	0.28
Whelk, true, unclassified	79	0.003	0.20
Northern stargazer	45	0.002	0.11
Sponge, unclassified	36	0.001	0.09
Barndoor skate	35	0.001	0.09
Clearnose skate	30	0.001	0.08
Northern sea robin	30	0.001	0.08
Sea star, unclassified	28	0.001	0.07
Smooth dogfish	22	0.001	0.06
American lobster	20	0.001	0.05
Black sea bass	20	0.001	0.05
Skate, little or winter	19	0.001	0.05
Fourspot flounder	12	0.0005	0.03
Windowpane flounder	8	0.0003	0.02
Moon snail	6	0.0002	0.02
Ocean pout	6	0.0002	0.01
Red hake	5	0.0002	0.01
American plaice	4	0.0001	0.01
Bluefish	3	0.0001	0.01
Whelk, unclassified	3	0.0001	0.01
Spotted hake	2	0.0001	0.01
Hermit crab, unclassified	2	0.0001	0.01
Silver hake	2	0.0001	0.004
Yellowtail flounder	1	0.00004	0.003
Winter flounder	1	0.00003	0.002
Scup	1	0.00003	0.002
Chain dogfish	1	0.00003	0.002
Sea raven	1	0.00002	0.001
Stony coral, unclassified	0.4	0.00001	0.001
Eel, unclassified	0.1	0.000004	0.0003
Sea cucumber, unclassified	0.1	0.000004	0.0003

Table 6. Total weights of species caught during all observed surfclam hauls in 2016, and their percentage of both total catch and un-targeted catch.

Surfclam fishery			
Number of observed trips	28		
Number of observed hauls	815		
Species caught	**Weight (lbs)**	**% of total catch**	**% of un-targeted catch**
Surfclam (round weight)	1,845,643	97.50	
Moon snail, unclassified	12,527	0.66	26.51
Ocean quahog (round weight)	12,267	0.65	25.96
Mussel, unclassified	12,007	0.63	25.41
Winter skate	2,737	0.14	5.79
Little skate	2,393	0.13	5.06
Horseshoe crab	1,307	0.07	2.77
Northern stargazer	1,131	0.06	2.39
Rock crab	651	0.03	1.38
Hermit crab, unclassified	618	0.03	1.31
Northern sea robin	351	0.02	0.74
Monkfish	323	0.02	0.68
Sea scallop	294	0.02	0.62
Spiny dogfish	168	0.01	0.36
Snail, unclassified	142	0.01	0.30
Elasmobranch eggs, unclassified	71	0.004	0.15
Summer flounder	60	0.003	0.13
Winter flounder	32	0.002	0.07
Jonah crab	27	0.001	0.06
Striped sea robin	27	0.001	0.06
American lobster	25	0.001	0.05
Channeled whelk	21	0.001	0.04
Windowpane flounder	12	0.001	0.03
Haddock	12	0.001	0.02
Longhorn sculpin	11	0.001	0.02
Sea raven	8	0.0004	0.02
Skate, little or winter	8	0.0004	0.02
Whelk, true, unclassified	5	0.0003	0.01
Ocean pout	4	0.0002	0.01
Lady crab	3	0.0002	0.01
Sea urchin, unclassified	2	0.0001	0.004
Worm, unclassified	2	0.0001	0.004
Anemone, unclassified	1	0.0001	0.003
Sea star, unclassified	1	0.0001	0.003
Stony coral, unclassified	1	0.00004	0.001
Sponge, unclassified	1	0.00003	0.001
Witch flounder	0.4	0.00002	0.001
Sand dollar	0.4	0.00002	0.001

Table 7. Estimated total fishery bycatch in pounds for 2016 by species.

	Ocean quahog fishery	Surfclam fishery
2016 landings (lbs meats)	21,036,293	39,428,066
Estimated total bycatch by species		
American lobster	1,340	2,844
American plaice	251	
Anemone, unclassified		146
Barndoor skate	2,291	
Black sea bass	1,333	
Bluefish	198	
Cancer crab, unclassified	18,550	
Channeled whelk		2,351
Clearnose skate	2,007	
Elasmobranch eggs, unclassified		7,994
Fourspot flounder	799	
Haddock		1,288
Hermit crab, unclassified	132	69,239
Horseshoe crab	11,638	146,371
Jonah crab	10,760	3,034
Lady crab		336
Little skate	449,930	267,919
Longhorn sculpin		1,209
Monkfish	206,046	36,176
Moon snail	422	1,402,531
Mussel, unclassified	54,751	1,344,344
Northern sea robin	1,947	39,344
Northern stargazer	2,971	126,576
Ocean pout	370	448
Ocean quahog (round weight)		1,373,410
Red hake	323	
Rock crab	11,011	72,911
Sea raven	33	896
Sea scallop	766,527	32,929
Sea star, unclassified	1,875	134
Sea urchin		235
Silver hake	106	
Skate unclassified	9,902	896
Smooth dogfish	1,459	
Snail, unclassified	40,743	15,899
Spiny dogfish	43,324	18,821
Sponge, unclassified	2,390	67
Spotted hake	158	
Striped sea robin	15,071	2,978
Summer flounder	12,457	6,673
Surfclam (round weight)	846,732	
Whelk unclassified	5,360	537
Windowpane flounder	508	1,366
Winter flounder	59	3,594
Winter skate	48,882	306,446
Worm, unclassified	10,621	190

Table 8. Observed bycatch by trip, in pounds, surfclam observed trips.

Trip	surfclams (round weight)	all OQ	all snails	all scallops	all teleosts	all elasmobranchs	all other inverts
1	112,615		73		16	193	1
2	69,173				498	164	587
3	108,103		2,973		6	2	13
4	41,987		479	35	5	16	226
5	70,072	614	81	85	94	349	34
6	72,063	5			2	39	60
7	85,307		1,687		9	286	11,945
8	112,862		1,699		363	1,226	7
9	43,973				169	3	29
10	33,276			2	239	6	216
11	8,236	7	5	113	8	1	4
12	21,839				12		14
13	20,323	819	47				3
14	53,223		115		24	69	111
15	36,368				29	22	10
16	38,925	1,213	14	2	34	9	99
17	134,701				9	211	1
18	40,048		1		134	85	97
19	15,781	1,785		31	8		6
20	43,503	2,195	9		5	98	147
21	53,223	4		26	99	68	44
22	141,126		1,634		24	51	27
23	169,700		790			15	
24	55,900		124		6	716	30
25	27,363				3	183	12
26	21,091		21			29	4
27	94,932				4	486	
28	119,930		1,953		2	74	4

Table 9. Observed bycatch by trip, in pounds, ocean quahog observed trips.

trip	ocean quahogs (round weight)	all SC	all snails	all scallops	all teleosts	all elasmos	all other inverts
1	158,148		4	2,081	147	425	25
2	338,278			509	180	456	
3	53,535			1,367	44	82	53
4	272,884			2,169	1,536	1,901	3
5	110,072			116	67	291	310
6	123,579			60	213	169	108
7	182,071	9,392		1,220	136	386	159
8	149,225			182	40	172	15
9	197,666			372	111	439	133
10	214,583			698	248	259	4
11	117,521		79	819	178	857	349
12	102,755		5	188	91	234	18
13	225,707			1,285	199	1,329	661
14	119,578			285	168	26	5
15	263,690	3,434		260	320	1,426	22

Status of Non-Target Species

The most recent benchmark stock assessment for sea scallop was completed in July 2014 (NEFSC 2014). This assessment indicated that the sea scallop stock was not overfished, and overfishing was not occurring.

For the other non-target species, according to the 2016 NE Skate Stock Status Update, little skate and winter skate are not overfished and are not subject to overfishing (NEFSC 2017c). [30] Moon snails have not been assessed; therefore, their overfished and overfishing status is unknown.

6.2 Physical Environment and Essential Fish Habitat (EFH)

The physical, chemical, biological, and geological components of benthic and pelagic environments are important aspects of habitat for marine species and have implications for reproduction, growth, and survival of marine species. The following sections briefly describe key aspects of physical habitats which may be impacted by the alternatives considered in this document. This information is largely drawn from Stevenson et al. (2004), unless otherwise noted.

6.2.1 Physical Environment

Surfclams and ocean quahogs inhabit the northeast U.S. shelf ecosystem, which includes the area from the Gulf of Maine south to Cape Hatteras, extending seaward from the coast to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The northeast shelf ecosystem includes the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types.

Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents.

The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina.

The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom. The continental shelf in this region was shaped largely by sea level fluctuations caused by past ice ages. The shelf's basic morphology and sediments derive from the retreat of the last ice sheet and the subsequent rise in sea level. Currents and waves have since modified this basic structure.

[30] 2016 NE Skate Stock Status Update available at: https://s3.amazonaws.com/nefmc.org/4_NEFSC_SkateMemo_July_2017_170922_085135.pdf

Shelf and slope waters of the Mid-Atlantic Bight have a slow southwestward flow that is occasionally interrupted by warm core rings or meanders from the Gulf Stream. On average, shelf water moves parallel to bathymetry isobars at speeds of 5 - 10 cm/s at the surface and 2 cm/s or less at the bottom. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate of 20 cm/s that increases to 100 cm/s near inlets.

The shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope (100 - 200 m water depth) at the shelf break. Numerous canyons incise the slope, and some cut up onto the shelf itself. The primary morphological features of the shelf include shelf valleys and channels, shoal massifs, scarps, and sand ridges and swales. Most of these structures are relic except for some sand ridges and smaller sand-formed features. Shelf valleys and slope canyons were formed by rivers of glacier outwash that deposited sediments on the outer shelf edge as they entered the ocean. Most valleys cut about 10 m into the shelf; however, the Hudson Shelf Valley is about 35 m deep. The valleys were partially filled as the glacier melted and retreated across the shelf. The glacier also left behind a lengthy scarp near the shelf break from Chesapeake Bay north to the eastern end of Long Island. Shoal retreat massifs were produced by extensive deposition at a cape or estuary mouth. Massifs were also formed as estuaries retreated across the shelf.

Some sand ridges are more modern in origin than the shelf's glaciated morphology. Their formation is not well understood; however, they appear to develop from the sediments that erode from the shore face. They maintain their shape, so it is assumed that they are in equilibrium with modern current and storm regimes. They are usually grouped, with heights of about 10 m, lengths of 10 - 50 km and spacing of 2 km. Ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. The seaward face usually has the steepest slope. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Swales occur between sand ridges. Since ridges are higher than the adjacent swales, they are exposed to more energy from water currents and experience more sediment mobility than swales. Ridges tend to contain less fine sand, silt and clay while relatively sheltered swales contain more of the finer particles. Swales have greater benthic macrofaunal density, species richness and biomass, due in part to the increased abundance of detrital food and the less physically rigorous conditions.

Sand waves are usually found in patches of 5 - 10 with heights of about 2 m, lengths of 50 - 100 m and 1 - 2 km between patches. Sand waves are primarily found on the inner shelf, and often observed on sides of sand ridges. They may remain intact over several seasons. Megaripples occur on sand waves or separately on the inner or central shelf. During the winter storm season, they may cover as much as 15% of the inner shelf. They tend to form in large patches and usually have lengths of 3 - 5 m with heights of 0.5 - 1 m. Megaripples tend to survive for less than a season. They can form during a storm and reshape the upper 50 - 100 cm of the sediments within a few hours. Ripples are also found everywhere on the shelf and appear or disappear within hours or days, depending upon storms and currents. Ripples usually have lengths of about 1 - 150 cm and heights of a few centimeters.

Sediments are uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0 - 10 m covers most of the shelf. The mean bottom flow from the constant southwesterly current is not fast enough to move sand, so sediment transport must be episodic. Net sediment movement is in the same southwesterly direction as the current. The

sands are mostly medium to coarse grains, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf but is common in the Hudson Shelf Valley.

Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the "mud line," and sediments are 70 - 100% fine on the slope. On the slope, silty sand, silt, and clay predominate (Stevenson et al. 2004).

Greene et al. (2010) identified and described Ecological Marine Units (EMUs) in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative depth), and benthic organisms. According to this classification scheme, the sediment composition off New England and the Mid-Atlantic is about 68% sand, 26% gravel, and 6% silt/mud. The seafloor is classified as about 52% flat, 26% depression, 19% slope, and 3% steep (Table 10).

Artificial reefs are another significant Mid-Atlantic habitat. These localized areas of hard structure were formed by shipwrecks, lost cargoes, disposed solid materials, shoreline jetties and groins, submerged pipelines, cables, and other materials (Steimle and Zetlin 2000). While some of these materials were deposited specifically for use as fish habitat, most have an alternative primary purpose; however, they have all become an integral part of the coastal and shelf ecosystem. In general, reefs are important for attachment sites, shelter, and food for many species, and fish predators such as tunas may be attracted by prey aggregations or may be behaviorally attracted to the reef structure.

Like all the world's oceans, the western North Atlantic is experiencing changes to the physical environment as a result of global climate change. These changes include warming temperatures; sea level rise; ocean acidification; changes in stream flow, ocean circulation, and sediment deposition; and increased frequency, intensity, and duration of extreme climate events. These changes in physical habitat can impact the metabolic rate and other biological processes of marine species. As such, these changes have implications for the distribution and productivity of many marine species. Several studies demonstrate that the distribution and productivity of several species in the Mid-Atlantic have changed over time, likely because of changes in physical habitat conditions such as temperature (e.g., Weinberg 2005, Lucey and Nye 2010, Nye et al. 2011, Pinsky et al. 2013, Gaichas et al. 2015).

Table 10. Composition of EMUs off New England and the Mid-Atlantic (Greene et al. 2010). EMUs which account for less than 1% of the surface area of these regions are not shown.

Ecological Marine Unit	Percent Coverage
High Flat Sand	13%
Moderate Flat Sand	10%
High Flat Gravel	8%
Side Slope Sand	6%
Somewhat Deep Flat Sand	5%
Low Slope Sand	5%
Moderate Depression Sand	4%
Very Shallow Flat Sand	4%
Side Slope Silt/Mud	4%
Moderate Flat Gravel	4%

Deeper Depression Sand	4%
Shallow Depression Sand	3%
Very Shallow Depression Sand	3%
Deeper Depression Gravel	3%
Shallow Flat Sand	3%
Steep Sand	3%
Side Slope Gravel	3%
High Flat Silt/Mud	2%
Shallow Depression Gravel	2%
Low Slope Gravel	2%
Moderate Depression Gravel	2%
Somewhat Deep Depression Sand	2%
Deeper Flat Sand	1%
Shallow Flat Gravel	1%
Deep Depression Gravel	1%
Deepest Depression Sand	1%
Very Shallow Depression Gravel	1%

6.2.2 Essential Fish Habitat (EFH)

Information on surfclam and ocean quahog habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Atlantic Surfclam, *Spisula solidissima*, Life History and Habitat Characteristics." (Cargnelli et al. 1999a) and "Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Characteristics" (Cargnelli et al. 1999b). Electronic versions of these source documents are available at this website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current designations of EFH by life history stage for surfclam and ocean quahog are provided here:

Atlantic surfclam juveniles and adults: EFH habitat is defined as throughout the substrate, to a depth of three feet below the water/sediment interface, within federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90 percent of all the ranked ten-minute squares for the area where surfclams were caught in the NEFSC surfclam and ocean quahog dredge surveys. Surfclams generally occur from the beach zone to a [water] depth of about 200 feet, but beyond about 125 feet abundance is low.

Ocean quahog juveniles and adults: EFH habitat is defined as throughout the substrate, to a depth of three feet below the water/sediment interface, within federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90 percent of all the ranked ten-minute squares for the area where ocean quahogs were caught in the NEFSC surfclam and ocean quahog dredge surveys. Distribution in the western Atlantic ranges in [water] depths from 30 feet to about 800 feet. Ocean quahogs are rarely found where bottom water temperatures exceed 60 ºF, and occur progressively further offshore between Cape Cod and Cape Hatteras.

There are other federally-managed species with life stages that occupy essential benthic habitats that may be susceptible to adverse impacts from hydraulic clam dredges; descriptions of these are given in Table 1 of Appendix C (from Stevenson et al. 2004) and are available at: http://www.greateratlantic.fisheries.noaa.gov/hcd/list.htm.

6.2.3 Fishery Impact Considerations

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2003). Atlantic surfclam and ocean quahog are primarily landed by hydraulic clam dredges. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the MSA). As stated in section 2.2 of Amendment 13, the prime habitat of surfclam and ocean quahog consists of sandy substrates with no vegetation or benthic 'structures' that could be damaged by the passing of a hydraulic dredge. In these 'high energy' environments, it is thought that the recovery time following passage of a clam dredge is relatively short. Because of the potential that the fisheries adversely impact EFH for a number of managed species, eight action alternatives (including closed area alternatives) for minimizing those impacts were considered by the Council in Amendment 13.

A panel of experts who participated in a 2001 workshop to evaluate the potential habitat impacts of fishing gears used in the Northeast region concluded that there are potentially large, localized impacts of hydraulic clam dredges on the biological and physical structure of sandy benthic habitats (NEFSC 2002). The Council concluded in Amendment 13 that there may be some adverse effects of clam dredging on EFH, but concurred with the workshop panel that the effects are short term and minimal because the fisheries occurs in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats. The panel concluded that biological communities would recover within months to years (depending on what species was affected) and physical structure within days in high energy environments to months in low energy environments. The preamble to the EFH Final Rule (January 17, 2002; 67 FR (Federal Register) 2343) defines temporary impacts as those that are limited in duration and that allow the particular environment to recover without measurable impact.

Additionally, at the time that workshop was held, the overall area impacted by the clam fisheries was relatively small (approximately 100 square nautical miles), compared to the large area of high energy sand on the continental shelf. The closed area alternatives that were considered in Amendment 13 were analyzed for their biological, economic, and social impacts, but given the results of the gear effects analysis in that document (summarized above), the Council concluded that none of them were necessary or practicable. Since 2003, when Amendment 13 was implemented, the area open to surfclam and ocean quahog harvesting has expanded to include a large area on Georges Bank that had previously been closed since 1990 due to the presence of the toxin that causes PSP in the tissues of surfclam and ocean quahog (NMFS 2012 and 2013). As such, a portion of the fishing effort now operates on Georges Bank and the gear is now being used on more complex, hard-bottom habitats (e.g., Nantucket Sholas) than was the case in 2003. The habitat impact analysis conducted by the NMFS concluded that the adverse impacts of renewed clam dredging on Georges Shoal would be minimal and/or temporary as long as dredging was confined to the shallower, more dynamic sandy bottom habitats which were the only areas where it was believed that the gear could be operated.

A portion of the following discussion is excerpted from the NEFMC's Omnibus EFH Amendment 2 (OHA2) which implemented measures designed to minimize to the extent practicable the adverse effects of fishing on essential fish habitat.[31] The OHA2 employed a spatial explicit model (SASI = Swept Area Seabed Impact) to estimate habitat vulnerability

[31] Available at: https://www.nefmc.org/library/omnibus-habitat-amendment-2

incorporating gear-specific susceptibility (S) and recovery (R) scores for a number of geological and biological habitat features in various subtracts.

Hydraulic clam dredges have been used in the surfclam fishery for over five decades and in the ocean quahog fishery since its inception in the early 1970s. These dredges are highly sophisticated and are designed to: 1) be extremely efficient (80 to 95% capture rate); 2) produce a very low bycatch of other species; and 3) retain very few undersized clams (NEFSC 2002).

The typical dredge is 12 feet wide and about 22 feet long and uses pressurized water jets to wash clams out of the seafloor. Towing speed at the start of the tow is 2.5 knots and declines as the dredge accumulates clams. The dredge is retrieved once the vessel speed drops below 1.5 knots, which can be only a few minutes in very dense beds. However, a typical tow lasts about 15 minutes. The water jets penetrate the sediment in front of the dredge to a depth of about 8 – 10 inches, depending on the type of sediment and the water pressure. The water pressure that is required to fluidize the sediment varies from 50 pounds per square inch (psi) in coarse sand to 110 psi in finer sediments. The objective is to use as little water as possible since too much pressure will blow sediment into the clams and reduce product quality. The "knife" (or "cutting bar") on the leading bottom edge of the dredge opening is 5.5 inches deep for surfclams and 3.5 inches for ocean quahogs. The knife "picks up" clams that have been separated from the sediment and guides them into the body of the dredge ("the cage"). If the knife size is not appropriate, clams can be cut and broken, resulting in significant mortality of clams left on the bottom. The downward pressure created by the runners on the dredge is about 1 psi (NEFSC 2002).

Hydraulic clam dredges can be operated in areas of large-grain sand, fine sand, sand with small-grain gravel, sand with small amounts of mud, and sand with very small amounts of clay. Most tows are made in large-grain sand. Surfclam/ocean quahog dredges are not fished in clay, mud, pebbles, rocks, coral, large gravel >0.5 in (> 1.25 cm), or seagrass beds. For the most part, hydraulic clam dredging is restricted to sandy and muddy sand substrates because the gear can be damaged in hard bottom areas.

In the SASI model, susceptibility and recovery were only evaluated for hydraulic clam dredges for sand and granule-pebble substrates because this gear cannot be operated in mud or in rocky habitats (NEFSC 2002, Wallace and Hoff 2005). In the absence of much published information on the degree to which benthic habitat features are susceptible to this gear, professional judgment relied on the presumption that these dredges have a more severe immediate impact on surface and sub-surface habitat features than other fishing gears used in the Northeast region.

Hydraulic dredges have higher vulnerability scores than otter trawls and scallop dredges, and much higher vulnerability scores than the fixed gears. Across all gears, geological and biological features are generally most susceptible to impacts from hydraulic dredges as compared to other gear types (average scores for all features in a particular substrate and energy environment ranged from 2.5-2.8 out of 3). Average otter trawl and scallop dredge S scores (susceptibility score) ranged from 1.0 to 2.0. Higher S scores reflect a higher proportion of features with >25% encountered estimated to have a reduction in functional habitat value. For trawls and scallop dredges, there was a larger proportion of high S scores (S=2 or 3) for geological features, especially in mud and cobble, than for biological features; for hydraulic dredges, however, there was very little difference between feature classes.

Geological feature recovery values are slightly higher (i.e., recovery times are longer) for hydraulic dredges than for the other two mobile gears (i.e., otter trawl and scallop dredges) fished in similar habitats (sand and granule-pebble). Average recovery values are more similar for biological features across the three mobile gear types, although in a few cases estimated recovery times are longer for hydraulic dredge gear. This was due to differences in gear effects associated with hydraulic dredges as compared to scallop dredges or otter trawls.

Based on the results of the SASI model, the OHA2 implemented mobile bottom-tending gear throughout various habitat management areas (HMAs) selected by the NEFMC (Figures 6 and 7). In addition, the OHA2 included an exemption for hydraulic clam dredges in many of the HMAs and included a provision for clam dredge exemption for Georges Bank-Nantucket Shoals for a year after implementation of OHA2 to allow time for the NEFMC to consider creating access areas within two of the areas included in the alternatives. The approved HMAs include: (a) establishing new HMAs in Eastern Maine and on Fippennies Ledge where mobile bottom-tending gear is prohibited, (b) maintaining the Cashes Ledge Groundfish Closure Area with current restrictions and exemptions, (c) modifying both the Cashes Ledge and Jeffreys Ledge Habitat Closure Areas, which are closed to mobile bottom-tending gear, (d) prohibiting all fishing gear except lobster pots in the Ammen Rock Area, (e) maintaining the Western Gulf of Maine (WGOM) Habitat Closure Area, which is closed to mobile bottom-tending gear, (f) aligning the boundaries of the WGOM Groundfish Closure Area to match the WGOM Habitat Closure Area, (g) exempting shrimp trawling from the northwest corner of the WGOM areas, and (g) identifying the existing Gulf of Maine Roller Gear restriction as a habitat protection measure.[32]

As indicated above, the surfclam and ocean quahog fisheries was granted a one year exemption (which expired on April 8, 2019) for the Great South Channel and Georges Shoal HMAs following implementation of OHA2. The NEFMC has identified areas within the Great South Channel and Georges Shoal HMAs that are currently fished and may be suitable for a hydraulic clam dredging exemption that balances achieving optimum yield for the surfclam and ocean quahog fisheries with the requirement to minimize adverse fishing effects on habitat to the extent practicable and is consistent with the underlying objectives of OHA2. The Clam Dredge Framework Action has been submitted to NMFS and is expected to be finalized in 2019.[33]

[32] For additional information see: https://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf
[33] For additional information see: https://www.nefmc.org/library/clam-dredge-framework

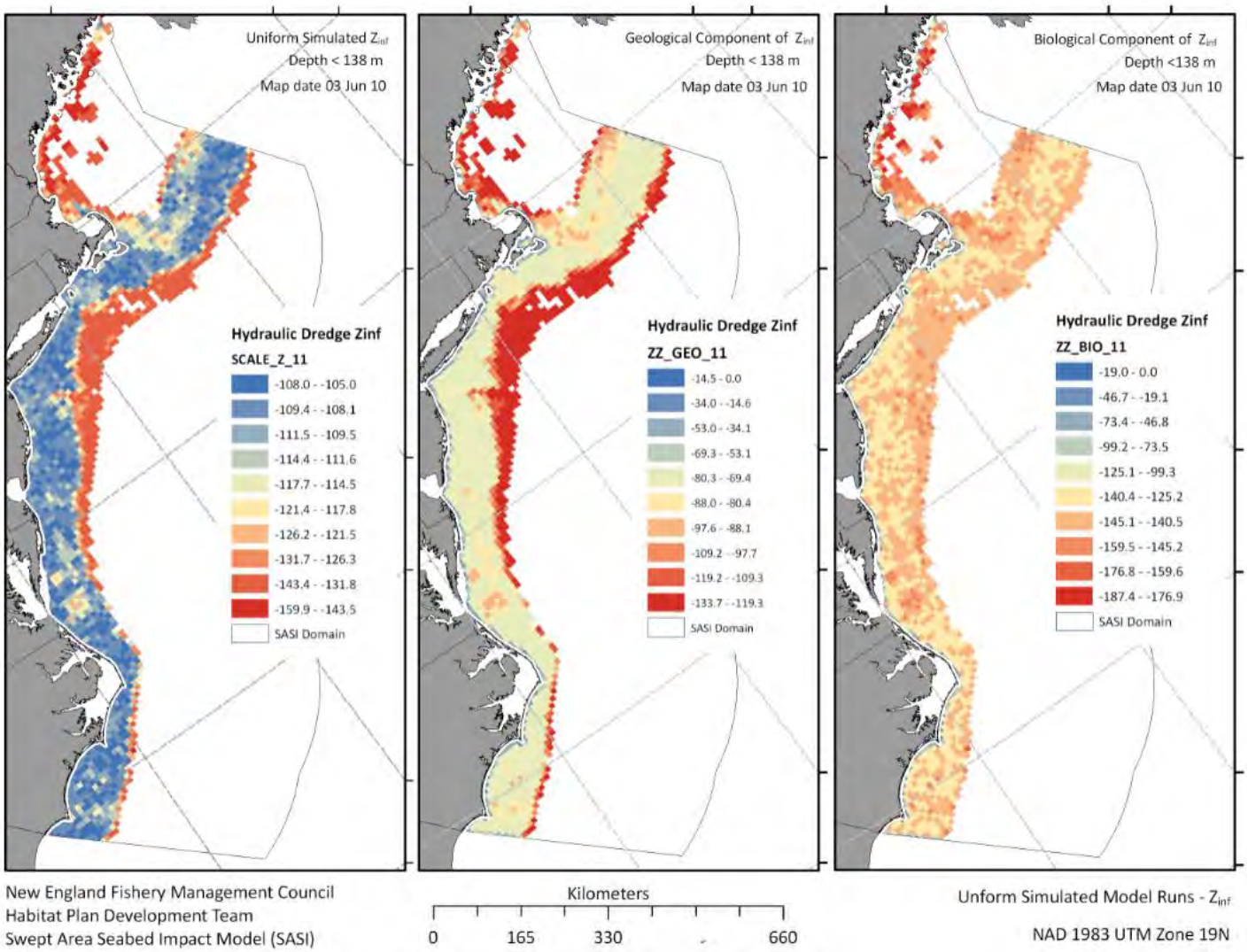


Figure 6. Simulation outputs (Z∞) for hydraulic dredge gear (left panel shows combined vulnerability of geological (mid-panel) and biological features (right-panel); blue=low vulnerability, red=high vulnerability).
Source: https://www.nefmc.org/library/omnibus-habitat-amendment-2

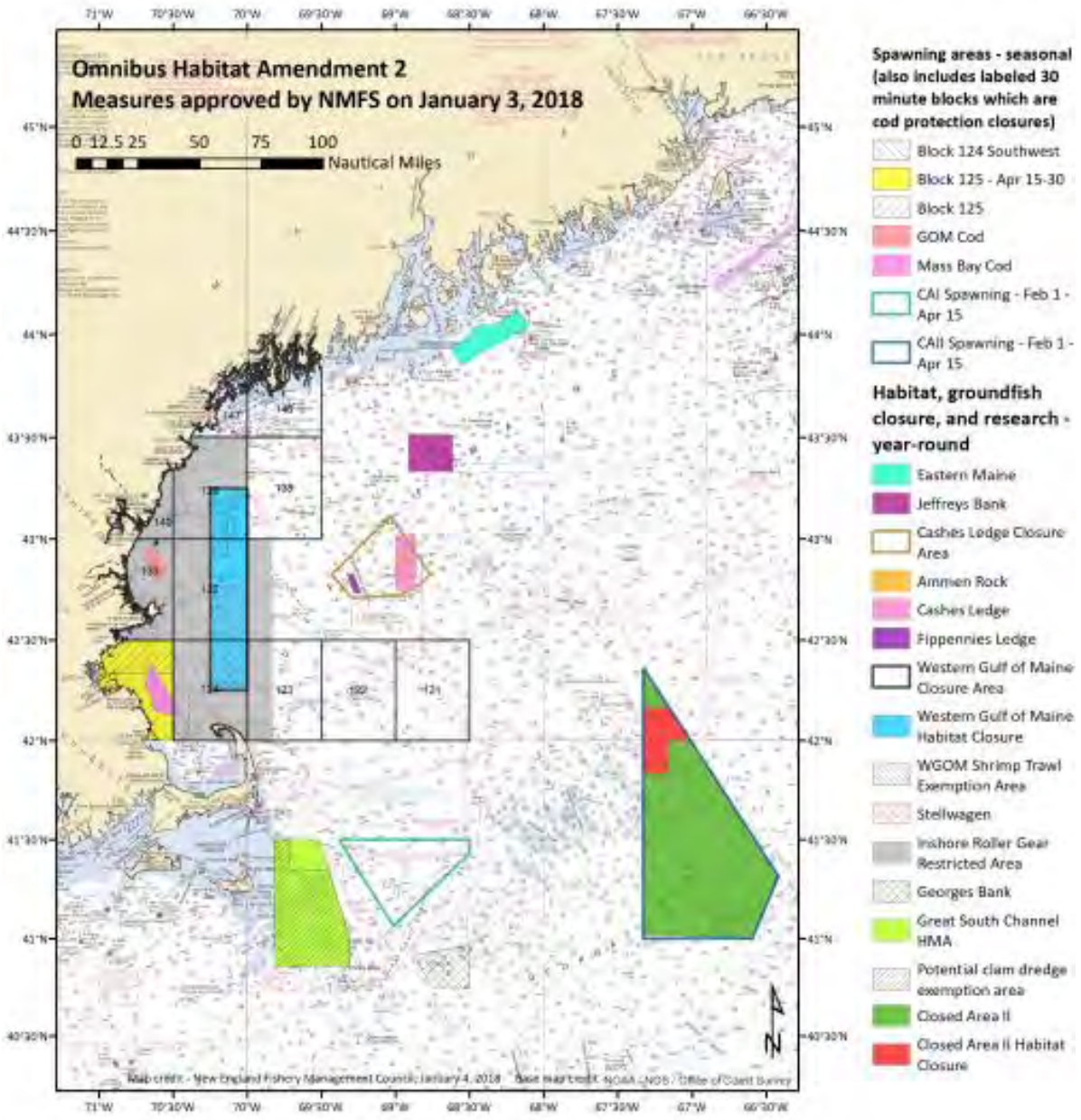


Figure 7. OHA2 approved regulations.
Source: https://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf

6.3 ESA and MMPA Protected Species

Numerous protected species inhabit the affected environment of the Atlantic Surfclam and Ocean Quahog FMP (Table 11; Hayes et al. 2017). These species are under NMFS jurisdiction and are afforded protection under the Endangered Species Act (ESA) of 1973 and/or the Marine Mammal Protection Act (MMPA) of 1972. More detailed description of the species listed in Table 11, including their environment, ecological relationships and life history information including recent stock status, are available at: http://www.greateratlantic.fisheries.noaa.gov/Protected/ and http://www.nmfs.noaa.gov/pr/sars/region.htm.

Cusk is a NMFS "candidate species" under the ESA. Candidate species are those petitioned species for which NMFS has determined that listing may be warranted under the ESA and those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. If a species is proposed for listing the conference provisions under Section 7 of the ESA apply (see 50 CFR §402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, these species will not be discussed further in this and the following sections; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed action. Additional information on cusk can be found at: https://fisheries.noaa.gov/species/cusk .

6.3.1 Species and Critical Habitat Not Likely to be Affected by the Proposed Action

The commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. Based on available information, it has been determined that this action is not likely to affect protected species (ESA-listed and/or MMPA protected; see Table 11). Further, this action is not likely to adversely affect any critical habitat for the species listed in Table 11. This determination was made because either the occurrence of the species is not known to overlap with the surfclam and ocean quahog commercial fisheries and/or there have never been documented interactions between the species and the primary gear type (i.e., clam dredge) used to prosecute the fisheries (Palmer 2017; NMFS NEFSC FSB 2015, 2016, 2017; see http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html and http://www.nmfs.noaa.gov/pr/sars/region.htm; https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries).

In the case of critical habitat, this determination has been made because the surfclam and ocean quahog fisheries will not affect the essential physical and biological features of North Atlantic right whale or loggerhead (Northwest Atlantic Distinct Population Segment, or DPS) critical habitat and, and therefore, will not result in the destruction or adverse modification of either species critical habitat (NMFS 2014; NMFS 2015a,b). See detailed discussion below.

As provided in Table 11 and Figure 8, North Atlantic right whale critical habitat also occurs in the affected environment of the surfclam/ocean quahog FMP. Critical habitat is habitat that contains physical and biological features essential to the conservation of the species. For right whales, it contains the features essential for successful foraging, calving, and calf survival (NMFS 2015a). Although comprised of two areas, only the area in the Gulf of Maine and Georges Bank region

(Unit 1) overlaps with the affected environment of the proposed action. Specifically, approximately half (372nm^2) of the Great South Channel (GSC) HMA overlaps with Unit 1 of critical habitat (21,334nm^2). This is 1.7% of the total right whale critical habitat. The action alternatives that propose alternative exemption areas for the fishery also have an overlap of less than 1.7%.

The boundaries of Unit 1 were defined by the distribution, aggregation and retention of *Calanus finmarchicus*, the primary and preferred prey of North Atlantic right whales, (NMFS 2015a,b). The essential physical features include prevailing currents, bathymetric features (such as basins, banks, and channels), oceanic fronts, density gradients, and flow velocities. The essential biological features include aggregations of copepods, preferably late stage *C. finmarchicus*, in the Gulf of Maine and Georges Bank region, as well as aggregations of diapausing (overwintering) populations in the deep basins of the region. NMFS (2015a,b) identified activities that may destroy or adversely modify these essential features; navigational dredging (termed "dredging") and commercial fisheries were amongst the activities analyzed and determined to not likely impact the identified foraging area physical or biological features.

"Dredging" as defined in NMFS's assessment (NMFS 2015a; 81 FR 4838, January 27, 2016) should not be confused with dredging using commercial fishing dredges, such as those used in the surfclam/ocean quahog FMP. In the assessment, dredging is in reference to the removal of material from the bottom of water bodies to deepen, widen or maintain navigation corridors, anchorages, or berthing areas, as well as sand mining (NMFS 2015a). Dredges typically used for navigational deepening or sand mining operations include hopper and cutterhead dredges. Although dredge size varies by location, hydraulic hopper dredges have draghead widths from a few feet to 12 feet; cutterhead diameters typically range from 16-20 inches (maximum 36 inches). These dredges disturb the sediment surface (down to 12 or more inches) creating turbidity plumes that last up to a few hours. In contrast, the surfclam/ocean quahog fishery uses hydraulic dredges to capture shellfish by injecting pressurized water into the sediment to a depth of 8-10 inches, creating a trench up to 30 cm deep and as wide as the dredge (approximately 12 feet) (Northeast Region Essential Fish Habitat Steering Committee 2002; see section 5.2.1 and Appendix B).

Navigational/sand mine dredging has not been found to limit the recovery of North Atlantic right whale (NMFS 2017a) or their critical habitat (NMFS 2015a). There is no evidence to suggest that this conclusion does not also hold true for dredging associated with commercial fishing operations. In terms of the surfclam/ocean quahog fishery, the scale and scope of hydraulic clam or mussel dredges is smaller than that associated with navigational/sand mining dredges. Turbidity created from such fishing dredges will be temporary in nature and will not impact the long-term viability of copepod aggregations. Fishing dredges, such as hydraulic clam, may also temporarily disturb localized copepod concentrations; however, these localized patches are continually replaced and/or shifting due to the dynamic oceanographic features of the Gulf of Maine (e.g., strong current, sharp frontal gradients, high mixing rates) that have a large effect on the distribution, abundance, and concentration of zooplankton populations in within the Gulf of Maine (NMFS 2015b). As provided above, one of the essential biological features of Unit 1 include aggregations of diapausing (overwintering) *C. finmarchicus* populations in the deep basins (i.e., Jordan, Wilkinson and Georges Basins) of the Gulf of Maine/Georges Bank Region. These basins provide refugia for diapausing populations of *C. finmarchicus* and serve as source populations for the annual

recruitment of copepods into the Gulf of Maine population (Davis 1987; Meise and O'Reiley 1996; Lynch et al. 1998; Johnson et al. 2006). In late winter, diapausing *C. finmarchicus* emerge from their dormant state and migrate to the surface layer where they are transported/advected to other areas within the Gulf of Maine by prevailing circulation patterns (Davis 1987; Baumgartner et al. 2007; Lynch et al. 1998; Johnson et al. 2006) . Depending on where copepods are transported, concentrated patches of copepods within the Gulf of Maine and GB region will be variable, both spatially and seasonally. Due to the dynamic physical oceanographic features of the Gulf of Maine and GB, copepods will continuously be advected from the deep ocean basins to areas throughout the Gulf of Maine and GB region. As hydraulic clam dredges do not operate in the deep basins of the Gulf of Maine /GB, these fishing gears will not affect or disrupt diapausing *C. finmarchicus* populations that are essential for populating the Gulf of Maine and George's Bank with right whales' preferred prey source. Based on this, although operation of the surfclam/ocean quahog FMP within regions of the Gulf of Maine or GB have the potential to cause temporary and localized disturbances of aggregations of copepods, it will not result in the permanent removal of the forage base necessary for right whale recovery. In addition, operation of hydraulic clam will not have any potential to affect the essential physical oceanographic features (i.e., currents, temperature, bathymetry) of Unit 1.

Given that (1) the impacts are temporary and localized, (2) the overlap of critical habitat and the alternatives is less than 1.7%, and (3) the activity is limited in scale and scope, the operation of the surfclam/ocean quahog fisheries will not affect the essential physical and biological features of North Atlantic right whale critical habitat and, therefore, will not result in the destruction or adverse modification of this species critical habitat (NMFS 2015a,b). The GSC HMA and proposed exemptions areas in the Great South Channel do not meet the adverse modification threshold and are not expected to impact right whale recovery.

Table 11. Species Protected Under the ESA and/or MMPA that may occur in the affected environment of the Atlantic surfclam and ocean quahog fisheries. Marine mammal species (cetaceans and pinnipeds) italicized and in bold are considered MMPA strategic stocks.

Species	Status	Potentially affected by this action?
Cetaceans		
North Atlantic right whale (Eubalaena glacialis)	*Endangered*	No
Humpback whale, West Indies DPS (Megaptera novaeangliae)	Protected (MMPA)	No
Fin whale (Balaenoptera physalus)	*Endangered*	No
Sei whale (Balaenoptera borealis)	*Endangered*	No
Blue whale (Balaenoptera musculus)	*Endangered*	No
Sperm whale (Physeter macrocephalus	*Endangered*	No
Minke whale (*Balaenoptera acutorostrata*)	Protected (MMPA)	No
Pilot whale (Globicephala spp.)[1]	*Protected (MMPA)*	No
Risso's dolphin (*Grampus griseus*)	Protected (MMPA)	No
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected (MMPA)	No
Short Beaked Common dolphin (*Delphinus delphis*)[2]	Protected (MMPA)	No
Bottlenose dolphin (Tursiops truncatus)[3]	*Protected (MMPA)*	No
Harbor porpoise (*Phocoena phocoena*)	Protected (MMPA)	No
Sea Turtles		
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered	No
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered	No
Green sea turtle, North Atlantic DPS (*Chelonia mydas*)	Threatened	No
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic Ocean DPS	Threatened	No
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered	No
Fish		
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	No
Atlantic salmon (*Salmo salar*)	Endangered	No
Atlantic sturgeon *(Acipenser oxyrinchus)*		
Gulf of Maine DPS	Threatened	No
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered	No
Cusk (*Brosme brosme)*	Candidate	No
Pinnipeds		
Harbor seal (*Phoca vitulina*)	Protected (MMPA)	No
Gray seal (*Halichoerus grypus*)	Protected (MMPA)	No
Harp seal (*Phoca groenlandicus*)	Protected (MMPA)	No
Hooded seal (*Cystophora cristata*)	Protected (MMPA)	No
Critical Habitat		
North Atlantic Right Whale	ESA (Protected)	No

[1] Due to the difficulties in discriminating short finned (*G. melas melas*) and long finned (*G. macrorhynchus*) pilot whales at sea, they are often just referred to as *Globicephala spp*.
[2] Called "common dolphin" before 2008.
[3] Includes the Western N. Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks.

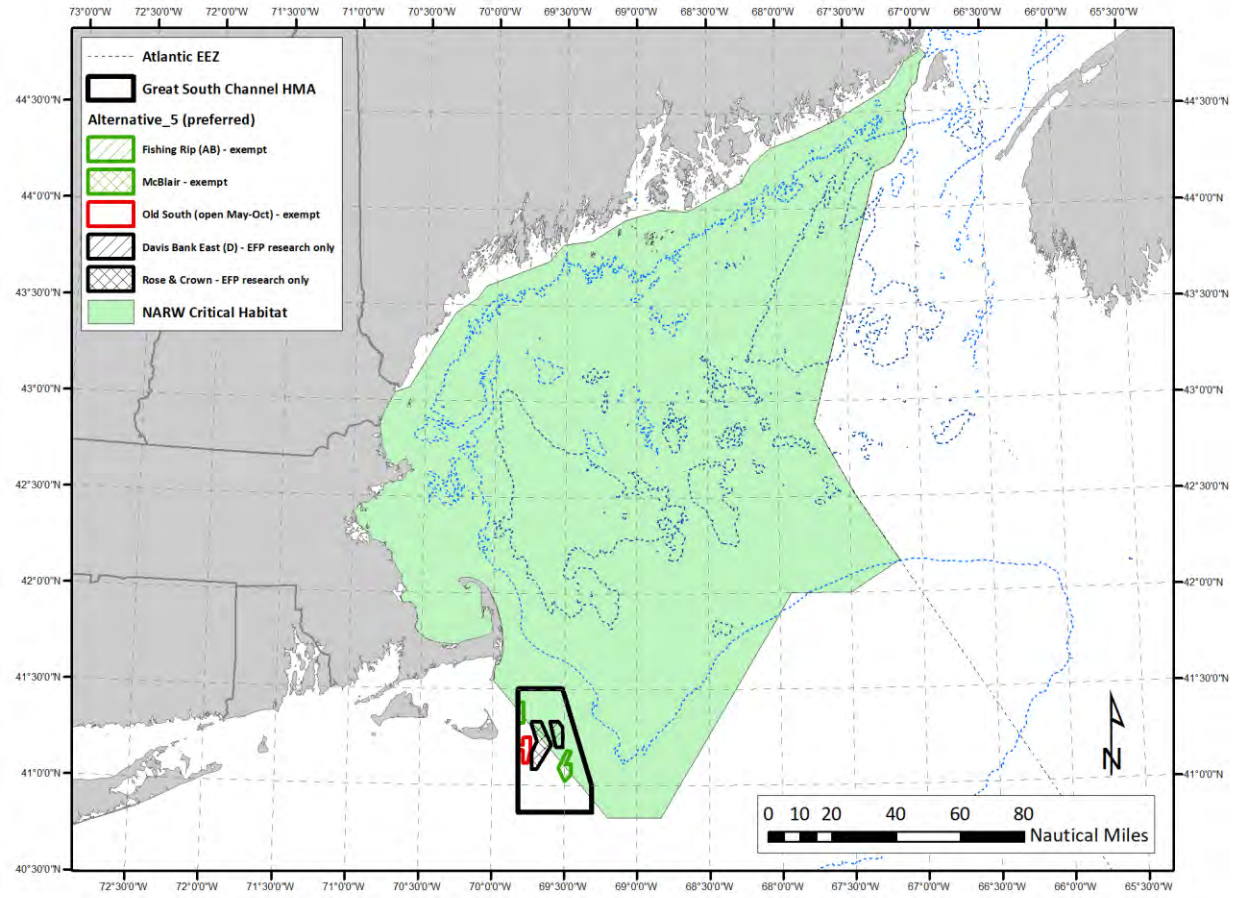


Figure 8. North Atlantic Right Whale Critical Habitat in the Gulf of Maine, GSC HMA, and proposed action exemption areas and research areas. Additional areas of critical habitat are designated along the coasts of South Carolina, Georgia, and Florida, but are not shown here.

6.4 Human Communities and Economic Environment

When Amendment 13 to the FMP was developed, the Council hired Dr. Bonnie McCay and her associates at Rutgers University to describe the ports and communities that are associated with the surfclam and ocean quahog fisheries. The researchers did an extensive job characterizing the three main fisheries (non-Maine ocean quahog, Maine ocean quahog, and surfclam). The McCay team characterizations of the ports and communities are based on government census and labor statistics and on observations and interviews carried out during the late 1990s and in the fall of 2001. The description of the fishing gear, areas fished, etc. are fully described in Amendment 13. Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs (MAFMC 2003). Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine (MAFMC 2018a and 2018b). The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market (MAFMC 2018b). The other

fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products (MAFMC 2018a and 2018b).

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: https://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php. In addition, Fishery Performance Reports prepared by industry advisors, provide additonal information on the social and economic environments from the industry members perspectives and are available at: http://www.mafmc.org. Recent trends in the fisheries are presented below and in Fishery Information Documents also available on the Council website.

6.4.1 Fishery Descriptions

6.4.1.1 Atlantic Surfclam

The total number of vessels participating in the surfclam fishery has remained relatively stable in the recent decade (Table 12). In 2017, about 2.2 million bushels of surfclams were landed, slighlty lower than 2016 at 2.3 million bushels. The average ex-vessel price of surflcams reported by processors was $13.90 in 2017, slightly higher than the $13.25 per bushel seen in 2016. The total ex-vessel value of the 2017 federal harvest was approximately $31 million, the same as 2016. Industry has described several factors that have affected their industry. Trips harvesting surfclams have increased in length as catch rates have declined (MAFMC 2009, 2010, 2013).

As indicated above, surfclams on Georges Bank were not fished from 1990 to 2008 due to the risk of PSP. There was light fishing on Georges Bank in years 2009-2011 under an exempted fishing permit and landings per unit of effort (LPUE) in that area was substantially higher (5-7 times higher) than in other traditional fishing grounds. NMFS reopened a portion of Georges Bank to the harvest of surfclam and ocean quahog beginning January 1, 2013 (77 FR 75057, December 19, 2012) under its authority in 50 CFR §648.76. Subsequently, NMFS reopened an additional portion of Georges Bank beginning August 16, 2013 (78 FR 49967). Harvesting vessels have to adhere to the recently adopted testing protocol developed by the National Shellfish Sanitation Program.

6.4.1.2 Ocean Quahogs

The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend. Trips harvesting quahogs have also increased in length as catch rates have declined steadily. (MAFMC 2009, 2010, 2013). The 30 or so vessels that reported landings during 2004 and 2005 has consolidated over time into fewer vessels.

The Maine ocean quahog fleet numbers started to decline when fuel prices soared in mid-2008, and a decline in the availability of smaller clams consistent with the market demand (i.e., half-shell market), and totaled 8 vessels in 2017 (Table 12).

The average ex-vessel price of non-Maine ocean quahogs reported by processors in 2017 was $7.18 per bushel, one cent higher than the 2016 price ($7.17 per bushel). In 2017, about 3.2 million bushels of non-Maine ocean quahog were landed, slightly higher than 2016 at 3.0 million bushels.

The total ex-vessel value of the 2017 federal harvest outside of Maine was approximately $23 million, slightly higher than the $22 million in 2016.

In 2017, the Maine ocean quahog fleet harvested a total of 34,550 Maine bushels, a 72% decrease from the 124,839 bushels harvested in 2006, and a 7% decrease from the prior year (2016; 37,051 bushels). Average prices for Maine ocean quahogs have declined substantially over the past 15 years. In 2003, there were very few trips that sold for less than $37.00 per Maine bushel, and the mean price was $40.66. Prices have since been lower; industry has indicated it was the result of aggressive price cutting. In 2017, the mean price was $31.15 per Maine bushel. The value of the 2017 harvest reported by the purchasing dealers totaled $1.1 million, a decrease of 78% when compared to 2003.

6.4.2 Description of the Areas Fished

A detailed description of the areas fished by the fisheries for surfclam and ocean quahogs was presented in the document titled “Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council” (Northern Economics, Inc. 2019). The commercial fishery for surfclam in Federal waters is prosecuted with large vessels and hydraulic dredges. The distribution of the fishery as catch and LPUE is shown in Figures 9 and 10. Landings, fishing effort, and LPUE (bu per hour fished) shifted north after 2000 as fishery productivity in the south declined; most of the landings are presently coming from areas off of New Jersey, Southern New England, and Georges Bank. The commercial fishery for ocean quahogs in Federal waters is prosecuted with large vessels and hydraulic dredges, and is very different from the small Maine fishery prosecuted with small vessels (35-45 ft).

6.4.3 Port and Community Description

Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs. Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine. The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products.

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: https://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php and in Northern Economics, Inc. (2019).

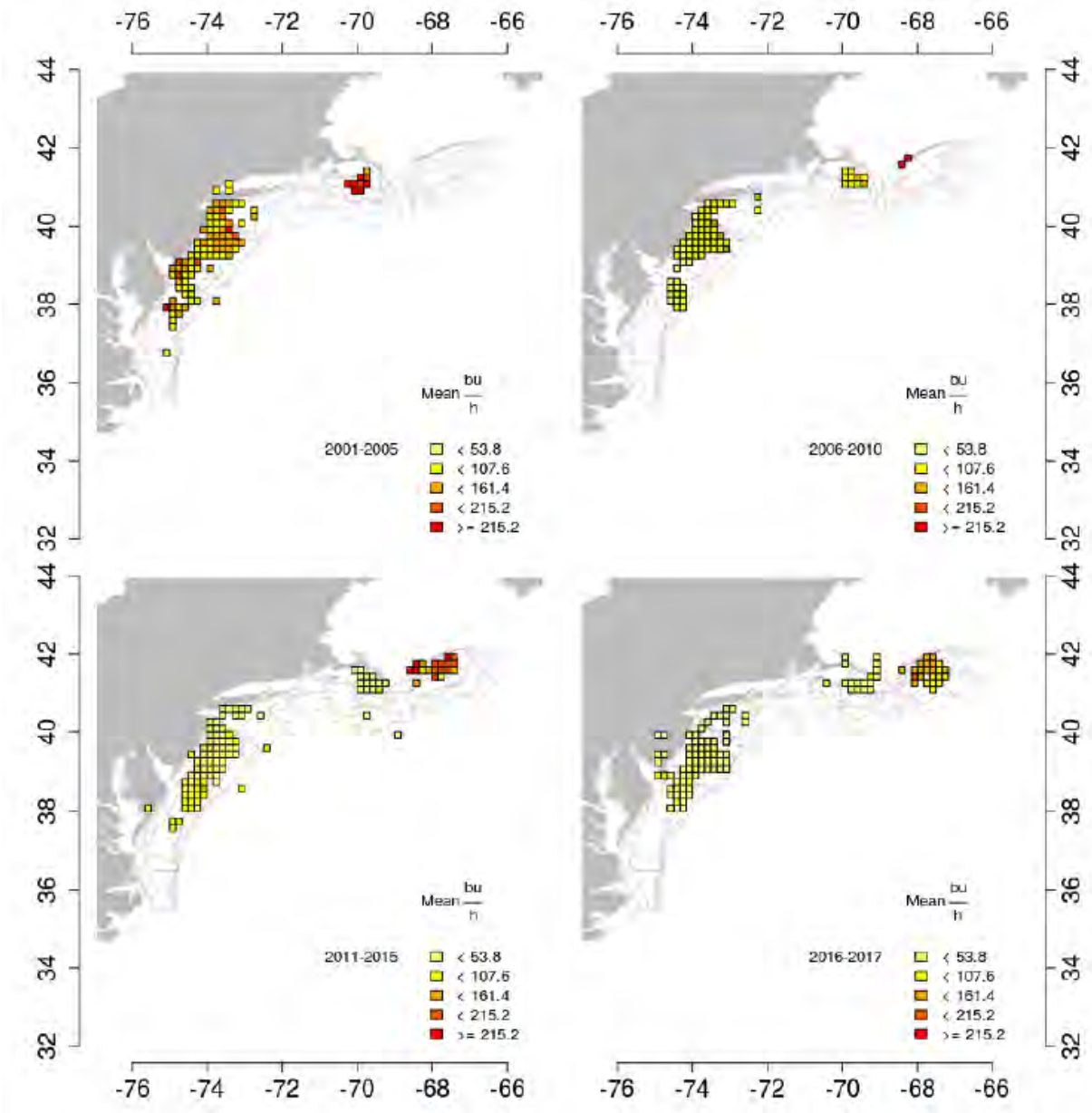


Figure 9. Average surfclam landings per unit effort (LPUE; bu h-1) by ten-minute squares over time, 2001-2016 and preliminary 2017. Only squares where more the 5 kilo bushels were caught are shown. Source: Dan Hennen Personal Communication, March 22, 2018.

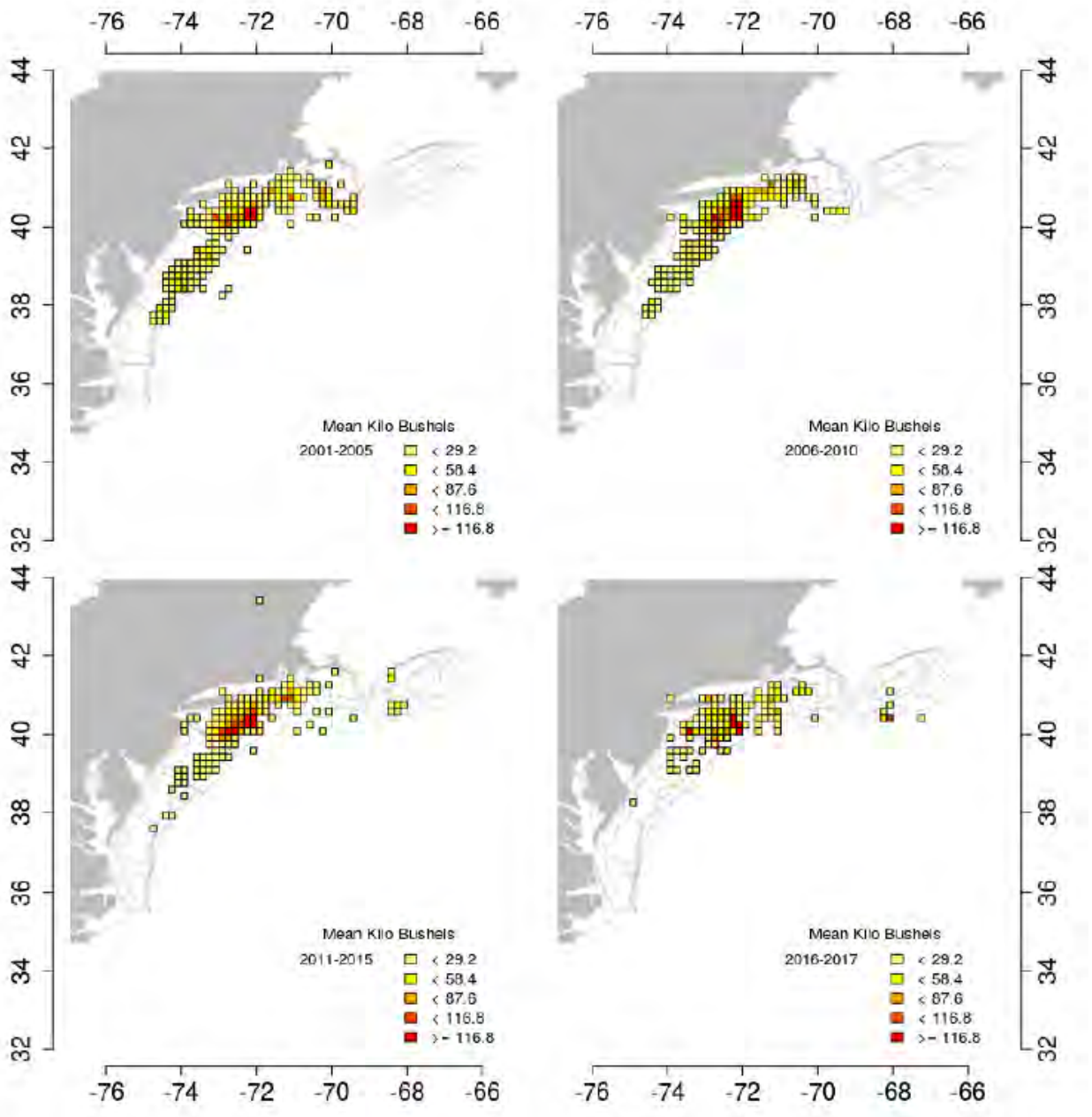


Figure 10. Average ocean quahog landings by ten-minute squares over time, 2001-2016, and preliminary 2017. Only squares where more the 5 kilo bushels were caught are shown.
Source: Dan Hennen Personal Communication, March 22, 2018.

6.4.4 Vessels and Dealers

Vessels

The total number of vessels participating in the surfclam fishery has been relatively stable from 2004 through 2017, ranging from 29 vessels in 2006 to 40 vessels in 2017 (Table 12). [34] The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend. Trips harvesting quahogs have also increased in length as catch rates have declined steadily (MAFMC 2009, 2010, 2013). The 30 or so vessels that reported ocean quahog landings during 2004 and 2005 was reduced and coast-wide harvests consolidated on to approximately 20 vessels in the subsequent years. The Maine ocean quahog fleet numbers started to decline with fuel prices soaring in mid-2008 and totaled 8 in 2017 (Table 12).

Initially, 154 vessel received ITQ allocation in 1990; however, in the last decade there have been fewer than 50 vessels participating in the fisheries each year. While it is not possible to accurately project future vessel consolidation patterns, it is possible that under additional vertical integration the number of vessels participating in the fisheries could decrease further. Vertically integrated companies could choose to retire older less efficient vessels (for larger, newer, more efficient ones). In addition, there could be further departure of the few independent harvesters still participating in the fisheries. In 2016 and 2017, a handful of independent vessels (less than 5) reported landings of surcalms and ocean quahogs.

Table 12. Surfclam and ocean quahog active vessels composition, 2004-2017.

Vessel-type	Harvested Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Non-Maine Vessels	Both surfclam & quahog	14	12	9	9	8	8	12	12	13	7	7	6	8	14
	Only surfclam	21	24	20	24	24	28	22	24	29	33	31	31	30	26
	Only quahog	15	12	9	8	10	7	9	7	6	9	9	10	9	8
	Total	50	48	38	41	42	43	43	43	48	49	47	47	47	48
Maine Vessels	Only quahog	34	32	25	24	22	19	15	13	12	11	9	8	8	8

Dealers

In 2017, there were 9 companies (i.e., dealers) reporting purchases of surfclam and/or ocean quahog from the industrial fisheries outside of Maine. These 9 companies operated 15 different facilities located in multiple states. They were distributed by state as indicated in Table 13. Employment data for these specific firms are not available. In 2017, these companies bought approximately $23 million worth of ocean quahog and $31 million worth of surfclam.

[34] The reported number of vessels participating in the surfclam and/or ocean quahog fisheries in this document are derived from clam logbook data unless otherwise noted.

Table 13. Number of facilities that reported buying ocean quahog and surfclam by state (from NMFS dealer/processor report database) in 2017.

	MA	NJ	Other
Number of Facilities	8	3	4

6.4.5 ITQ Program and Market Description

Initial ITQ Allocations

The FMP to manage these fisheries was initiated in 1977. The FMP and subsequent Amendments (i.e., Amendments 1 through 7) can be credited with rebuilding the surfclam stock and contributing to some economic stability in the industry. However, by the mid-1980s, rapid growth in harvesting capacity in the surfclam fishery and associated inefficiencies (e.g., vessels could only fish 36 hours per quarter) led to the development of the ITQ system (MAFMC 1988).

The initial allocations of ITQ quota share were made to owners of all permitted vessels that harvested surfclams and/or ocean quahogs in the Atlantic EEZ from 1979 through 1988. In general terms, the formula for allocating surfclams in the Mid-Atlantic Area was based on average historical catch (80% of the allocation) plus a "cost factor" (20% of the allocation) based on the vessel's capacity (length x width x depth; a proxy for the owner's capital investment). For ocean quahogs, the allocation was simply based on the average historical catch. This meant that the initial ITQ shares were allocated to owners of surfclam and ocean quahog vessels (MAFMC 1988).

However, there were very limited restrictions on transfer of quota shares or ownership in the ITQ system (MAFMC 1988). The ITQ program allows allocation owners to permanently transfer the ITQ quota share (i.e., sale, permanent transfer) or lease ITQ out (i.e., cage tag leasing, temporary annual transfer). Since ITQs are transferable, this allows for shifts in production to participants that may be more efficient.

In the years before the surfclam and ocean quahog ITQ system was implemented, there was a build-up in the number of vessels participating in these fisheries, as vessel owners sought to build-up catch histories in order to obtain more ITQ quota share upon program implementation.[35] When the ITQ system was implemented, there were 125 vessels participating in the surfclam and ocean quahog fisheries (Färe et al. 2015).

Trends in Consolidation

The original ITQ allocations went to owners of vessels that qualified for the program. The ITQ program provided a great deal of flexibility and some of the individuals that received initial allocations of ITQ quota share sold out, while others acquired additional shares.

[35] It is also possible that the increase in vessels in an owner's fleet may have been in response to management measures limiting fishing time per vessel.

The ITQ program contained very few restraints on ownership or transfers, and as such, the program was extremely effective in rapidly eliminating economically excessive capacity (National Research Council 1999). Harvesters could consolidate their catch onto fewer vessels that could then operate at or near full capacity. A number of vessel owners, including vertically integrated processors, had assembled large fleets during the 1980s, and thus many owners were in a position to take one or more of their vessels out of the surfclam fishery to economize (McCay and Brandt 2001). Furthermore, some vessel owners took advantage of the surfclam and ocean quahog ITQ program to divest themselves of the older vessels they had accumulated during the moratorium, while other owners chose to lease their ITQ quota share to others or to leave the surfclam fishery entirely (McCay and Brandt 2001). The major decrease in the number of vessels participating in the clam fisheries occurred, as expected, at the onset of the program. There has been a large degree of further consolidation in the last 30 years.

For the 3 years (1987-1989) prior to the implementation of the ITQ system, there were on average, 137 and 67 active vessels fishing for quota in the surfclam and ocean quahog fisheries, respectively. On average, for the 5 years after the ITQ program implementation (1990-1995), the number of active vessels participating in the surfclam fisheries decreased to 73 vessels and the number of active vessels participating in the ocean quahog fisheries increased to 76 vessels (Brinson and Thunberg 2013, 2016). Further reductions in the number of active vessels participating in these fisheries occurred through time. In 2017, there were 48 vessels participating in these fisheries combined (Table 12). One of the goals of the ITQ system in these fisheries was to reduce fleet capacity; this goal was met, as more efficient operations purchased the quota share of less efficient operations, removing redundant capital from the fisheries.

Upon the program implementation in 1990, there were 154 entities (i.e., unique surfclam allocation holders/vessel owners) that received an initial Atlantic surfclam quota share. The number of entities receiving quota share decreased to 116 after the first year of implementation. The number of entities holding surfclam quota share remained relatively stable for the 1991 to 2000, ranging from 107 to 117 (Brinson and Thunberg 2013). Since 2005 the number of entities holding surfclam quota share declined from 81 (Brinson and Thunberg 2013) to 67 in 2017 (2017 Atlantic surfclam ITQ Allocation Holder Report).[36]

There were 117 entities (i.e., unique ocean quahog allocation holders) that received an initial ocean quahog quota share in 1990. The number of entities receiving quota share decreased to 82 after the first year of implementation. There was a slight steady reduction from year to year in the number of entities holding quota share from 1992 (82 entities) to 2003 (62 entities; Brinson and Thunberg 2013). However, since 2004 the number of entities holding surfclam quota share declined from 56 (Brinson and Thunberg 2013) to 37 in 2017 (2017 Atlantic surfclam ITQ Allocation Holder Report).[37]

There have been other reasons for consolidation. The cost of fuel prices and the distance needed to travel to harvest clams, which cascades through the vessel, processors, ports, etc., and has put greater emphasis on economy on scale and location, leading to additional consolidation (Surfclam and Ocean Quahog Advisory Panel 2016). Other factors that have caused stress in the industry have also resulted in additional consolidation. For example, in 2005 a series of conditions resulted

[36] Available at: https://www.greateratlantic.fisheries.noaa.gov/sustainable/species/clam/

in a substantial portion of the industrial fleet leaving the clam fishery and greatly reduced operations at the second-largest processor in the clam industry. Eastern Shore Seafood Products of Mappsville, Virginia was a vertically-integrated company operating both vessels and a processing plant (Northern Economics, Inc. 2019). In 2005, a deal was struck in which ownership of the plant and vessels were given over to an entity including the Truex, Meyers, Truex Group, and the Sea Watch management team. In May of 2008 the Mappsville plant ceased operations altogether and moved the processing work to other Sea Watch plants in Easton, Maryland and Milford, Delaware (Vaughn 2008).

A myriad of factors has contributed to the difficulties in the clam industry. Major users of clam meats have reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace. Trips harvesting surfclams have increased in length as catch rates have declined. All of these factors and more have resulted in clam-related businesses becoming less profitable in recent years. Consolidation and concentration in the industry has grown as the businesses in the strongest financial condition assimilate those in the weakest position (MAFMC 2009, 2010).

Processors were not directly incorporated into the initial allocation of quota; however, processors owning permitted vessels received the allocations associated with those vessels. Some processors or processors affiliates have developed quota ownership through either the acquisition of vessels and accompanying quota or the acquisition of quota directly (Mitchell et al. 2011).

Historically, vertically-integrated firms have been involved in the surfclam and ocean quahog fisheries. Some of these were subsidiaries of multinational food corporations with fleets of a dozen or so boats; others a family business with large fleets; and yet others were small rural processing operations with one or two boats of their own. The ability of processors to rely on their own vessels to supply raw product for their plants gave them bargaining power vis à vis the “independents” (McCay and Brandt 2001). With implementation of the ITQ program, an industry already marked by the dominance of a few large vertically integrated firms became even more so, as small-holders either sold out or chose to lease out their allocations rather than continue to fish (McCay et al. 2011).

In order for processors to meet delivery schedules set by their customers (many of which are large consumer goods companies, such as Progresso or Campbell Soup Company, or large food service companies, such as Sysco) results in that virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates. Processors need to be able to direct vessels to harvest at certain times, weather permitting. Given these scheduling requirements, it is not generally possible for a vessel to harvest for more than one processor and still meet the scheduling needs of the processors. Vessels must have quota at the time they harvest clams. Therefore, processors or fishers must arrange for the quota that the vessels require prior to leaving port. As a result of the need to harvest on a schedule, virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates (Mitchell et al. 2011).

Under the ITQ program, the ownership of ITQ quota share has replaced the ownership of surfclam vessels as a way to secure the supply of surfclams as raw materials. Prior to the ITQ program, only

surfclam vessels with moratorium permits were allowed to harvest surfclams in the Mid-Atlantic Area, the predominant surfclam area. As a result, clam processors owned and operated surfclam vessels to secure the supply of surfclams. However, any U.S. registered vessels are allowed to harvest surfclams under the Atlantic surfclam and ocean quahog ITQ program as long as they hold surfclam ITQ quota share. Therefore, the ownership of ITQ quota share becomes the key element. In fact, some of the integrated processors have abandoned their vessel operations and focused on securing the ownership of ITQ quota share (Wang 1995).

The HHI is a commonly accepted measure of market concentration (an indicator of the amount of competition in the marketplace). The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. According to the U.S. DOJ & Federal Trade Commission (FTC), Horizontal Merger Guidelines § 5.3 (2010), transactions that increase the HHI by more than 200 points in highly concentrated markets are presumed likely to enhance market power. [37]

NMFS data also show that the concentration of harvesting has risen substantially in the last decade, largely as the result of the backward integration of clam processors into harvesting (Mitchell et al. 2011). The processing sector itself has also changed. In 1979, there were 44 plants that processed either surfclams or ocean quahogs. The HHI of purchases by processors grew between 2003 and 2008 from 2,068 to 3,134 for surfclams and from 3,431 to 4,369 for ocean quahogs (Mitchell et al. 2011). Concentration has fallen somewhat after peaking in the surfclam and ocean quahog fisheries at 3,675 and 4,629, respectively, in 2007. The HHI of processor purchases for surfclams and ocean quahogs combined has also grown, from 2,226 in 2003 to 3,479 in 2008. In 2017, there were nine firms operating 15 plants in multiple states (section 6.4.4).

In addition, NMFS has also conducted an analysis of quota usage by examining records showing the harvest amounts for vessels in the surfclam and ocean quahog fisheries and tracing their ownership. This analysis indicated that the HHI of harvesting activity for surfclams in 2008 was 4,080 and the HHI of harvesting activity for ocean quahogs was 2,653. The HHI of harvesting activity for surfclam and ocean quahog combined was 2,890. Lastly, the HHI of ownership (quota ownership) of surfclam quota in 2009 was 1,167, and the HHI of ownership of ocean quahog quota was 993 (Mitchell et al. 2011).

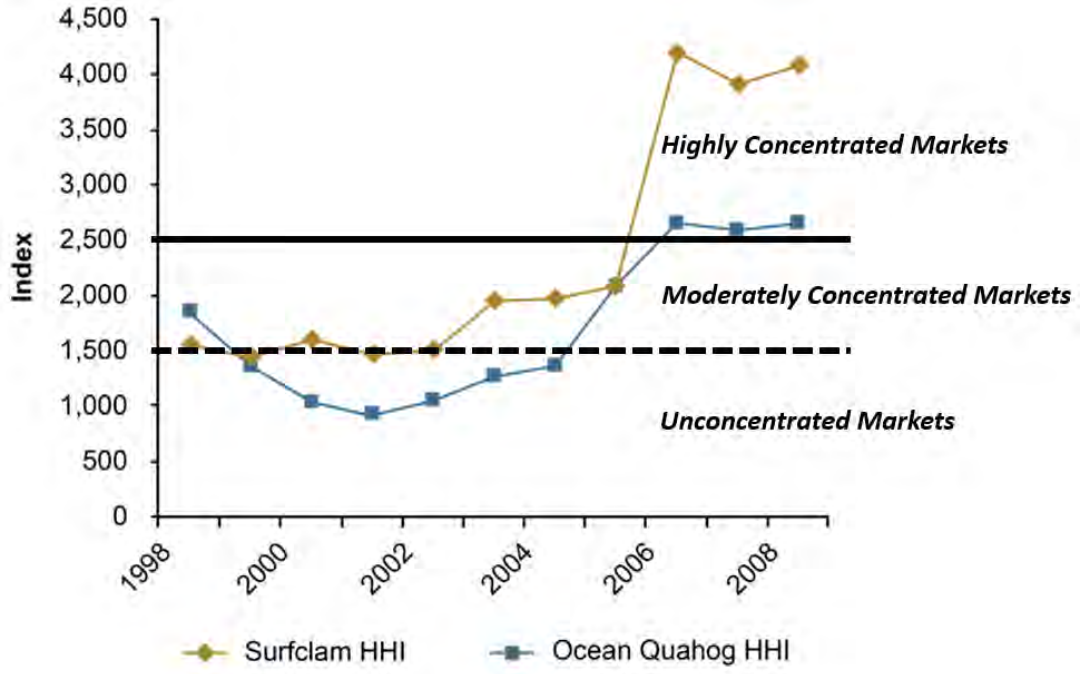
The HHI of harvesting (2006-2008) and processing (2005-2008) in the surfclam and ocean quahog fisheries estimated by NMFS (NMFS 2009) would be considered highly concentrated by the DOJ. Updated HHI values for the harvesting and processing sectors (John Walden, Pers. Comm., NEFSC 2019) are presented in Figures 11 and 12. These figures indicate that the harvesting and

[37] The HHI is equal to the sum of the squared market shares of the participants in the market. Thus, if there are three firms with shares of 50%, 30%, and 20%, the HHI is equal to 3,800 ($3,800 = 50^2 + 30^2 + 20^2 = 2500 + 900 + 400 = 3800$). The HHI value approaches zero when a specific market comprises a large number of similar firms, and reaches 10,000 when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. Markets in which the HHI is between 1,500 and 2,500 points are typically considered to be moderately concentrated and markets in which the HHI is in excess of 2,500 points are considered to be highly concentrated (https://www.justice.gov/atr/herfindahl-hirschman-index).

processing sectors for the surfclam and ocean quahog fisheries continue to be highly concentrated (2016-2018). The processing sector HHI values for 2016-2018 were calculated using the same methods as were used through 2008. However, the harvesting sector HHI values for 2016-2018 were calculated by using an algorithm to assign vessels to ownership groups based on permit data and other publicly available data sources (John Walden, Pers. Comm., NEFSC 2019). However, in order to identify ownership for the 2016-2018 period, vessel ownership data was used in conjunction with permit database to identify all the individuals who own one or more vessels by firm. This was the result of an improved database that provided the information in one place. In addition, online resources provided additional company and vessel information to identify vessel ownership.

The HHI values of ownership (quota ownership) for surfclam quota and ocean quahog quota were not updated. As previously stated, the Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power (monopoly/oligopoly) is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries. While it is possible that current HHI values of quota ownership (for both surfclam quota and ocean quahog quota) are likely to be slightly higher than those reported in 2009 (see penultimate paragraph above), those values are likely to not be of concern. This is based on the maximum quota ownership values reported in Tables 2 and 3, and the considerably large 2017 number of ITQ ownership holders in both fisheries as described above.

A) 1999-2008



B) 2016-2018

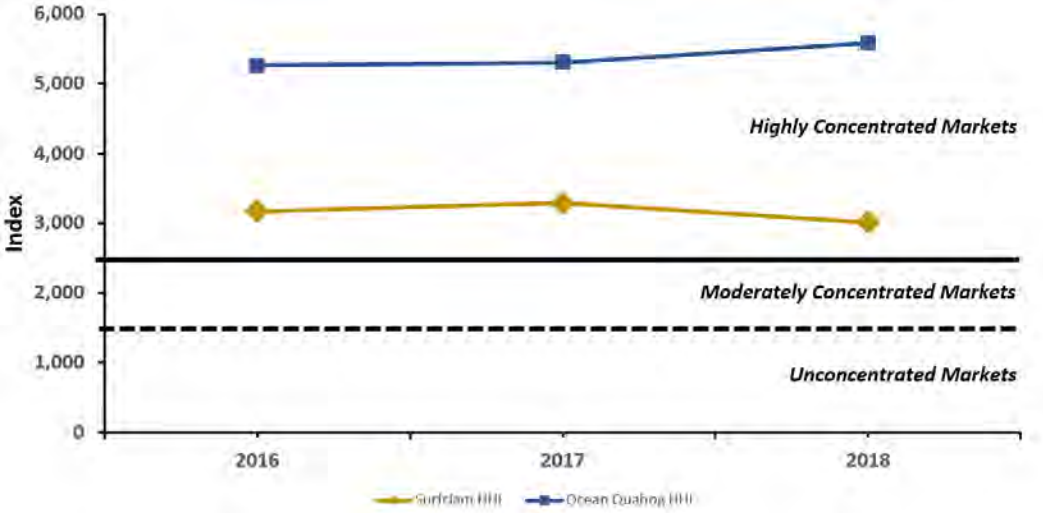


Figure 11. Herfindahl-Hirschman Index (HHI) of Market Concentration in Surfclam and Ocean Quahog Harvesting Sector, 1998-2008 (adapted from NMFS (2009)) and updated 2016-2018.

Note: As defined by DOJ, HHI values below the dashed horizontal line (1,500) shows Unconcentrated Markets; HHI values between the dashed horizontal line (1,500) and solid horizontal line (2,500) shows Moderately Concentrated Markets; HHI values above the solid horizontal line (2,500) shows Highly Concentrated Markets.

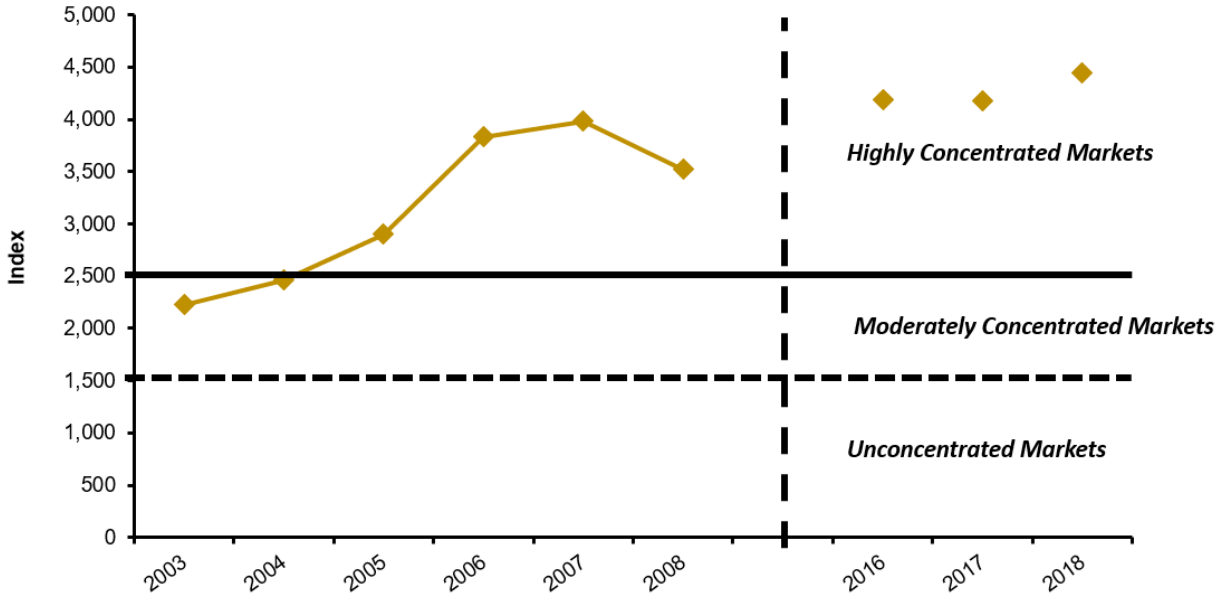


Figure 12. Herfindahl-Hirschman Index (HHI) of Market Concentration in Surfclam and Ocean Quahog Processing Sector (largely Vertically-Integrated), 2003-2008 (adapted from NMFS (2009)) and updated 2016-2018.

Note: As defined by DOJ, HHI values below the dashed horizontal line (1,500) shows Unconcentrated Markets; HHI values between the dashed horizontal line (1,500) and solid horizontal line (2,500) shows Moderately Concentrated Markets; HHI values above the solid horizontal line (2,500) shows Highly Concentrated Markets.

Brief Discussion on Market Power and Impacts on Competition

The Atlantic surfclam and ocean quahog limited access privilege program (LAPP) allows for the legal transferability of the "ownership" privileges. The advantage of transferability is that it provides flexibility and incentives to shift harvesting to lower cost vessels, which improves overall profitability of the fishing fleet. Some people argue that transferability has the potential to disrupt existing industry structure and also allows for fishery participants to gain from the sale of harvesting privileges rather than to use them to harvest fish. Since harvesting privileges are given away gratis on an annual basis, individuals or firms given these privileges can profit merely by holding quota, rather than fishing.

While transferability of harvesting privileges offers many potential advantages, a concentration of ownership can lead to several different types of problems. This can include problems with market power in the final product market (monopoly: a single seller; oligopoly: a few sellers), the input market (monopsony: a single buyer; oligopsony: a few buyers) for the fishery resource, or the quota share market. These problems are not unique to fisheries under LAPPs and can occur in other sectors of the economy as well. An additional problem associated with excessive ownership is that it can lead to undesired changes in the structure of the fishing community broadly defined (NMFS 2007).

One of the most obvious market power issues is monopoly power (pricing power on the product market), that could result from accumulation of significant quota shares. The pursuit of monopoly profits will lead to artificial reduction in output in the final fishery resource (product market) or also in the quota share market and increase in prices to the consumer. However, in most instances the risk of this happening is fairly small because the product from any one LAPP must compete with similar products from domestic and international fisheries. Unless the LAPP is associated with a unique fishery product with a separate niche market, this is unlikely to become a problem (NMFS 2007). Furthermore, processors in the surfclam and ocean quahog fisheries report that in order to meet the schedules set by their customers (many of which are large consumer goods companies, such as Progresso or Campbell's, or large food service companies, such as Sysco and others), virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates.[38] Processors also indicate that these large sophisticated buyers are able to exert significant pricing power because of their large purchases and because they have the capability to substitute imported clams for domestic clams in their products if prices warrant.[39] The threat created by the ability of major customers to use other sources of clams has the potential to limit any efforts by processors to raise prices above competitive levels, and processors report feeling the effects of this pressure from their large customers (Mitchell et al. 2011).

The Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power (monopoly/oligopoly) is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries.[40] It is possible that under some circumstances an excessive shares cap level of 100% may be appropriate for some fisheries. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011).

The CIE review of the Compass Lexecon report indicated that more attention should had been paid to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[41] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry and there with a small number of vessels and processors predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern than monopolization in the output market (Walden 2011).

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[38] Therefore, processors do not "post" a price that they are willing to pay for clams at unloading points. There is no "spot" market for surfclams or ocean quahogs (Mitchell et al. 2011).

[39] Imports of other clam species also provide a substitute for some uses (and a small portion of the domestic surfclam and ocean quahog harvest is exported). Processors report competition from imported clams from a number of countries, including Canada, Thailand, Chile, and others (Mitchell et al. 2011). Lastly, it is possible that clam meat competes with other proteins in some uses. Data are not available to rigorously evaluate whether other proteins, such as chicken or shrimp, compete with clam meat sufficiently that the prices of these substitute proteins substantially constrain the price of clam meat (Mitchell et al. 2011).

[40] The Compass Lexecon report did not analyse whether market power is exercised through the withholding of harvesting or processing, or through exclusionary conduct other than conduct involving quota ownership (Mitchell et al. 2011).

[41] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

An analysis was conducted by NMFS in 2009 to assess excessive share issues in the surfclam and ocean quahog ITQ fisheries. They found that while the ownership of ITQ quota share is mildly concentrated for surfclam ITQ quota share and unconcentrated for ocean quahog ITQ quota share, the use of quota is highly concentrated. The concentration of harvesting has risen substantially during the ITQ program largely as the result of the backward integration of processors into harvesting and the proliferation of long-term contracts among ITQ quota share owners, vessel owners, and processing firms.

As a result of this increase in vertical integration and in long-term contracts, processors now have direct or indirect control over the use of the majority of ITQ quota share in the surfclam and ocean quahog fisheries (NMFS 2009). NMFS examined the possibility that control over such a large amount of ITQ quota share is leading to lower prices paid to independent vessels for their harvest. A formal tests for oligopsony power (few buyers) by surfclam and ocean quahog processors was not done in the analysis conducted by the NMFS in 2009. They presented both landings and ex-vessel price trends, but not draw any conclusions about why these trends are occurring. However, the 2009 NMFS report indicated that over the past 40 years, net exit has occurred in both the harvest and processing sectors for a variety of reasons. For example, some of the major factors may have included:

1) declines in resource biomass of both species, particularly off southern states and in waters closer to shore
2) declining catch rates for surfclams beginning in 2001
3) lack of access to the surfclam and ocean quahog resources on Georges Bank due to PSP
4) increasing costs of vessel operation, particularly fuel and insurance
5) changing the federal fisheries management program from effort-based regulations to individual transferable quotas. Decoupling harvest rights from vessels allowed unneeded vessels to exit the fisheries
6) industry's shift to using larger vessels with greater capacity necessitates fewer of them

For the processing sector, factors that may have led to fewer firms include:
1) decreased resource availability (as with the vessel sector);
2) changing consumer tastes for clam products;
3) the high capital costs of modern clam plants;
4) and perhaps most importantly, the high cost of equipment required to comply with stricter wastewater discharge regulations which resulted in many plants shutting down.

Taken together, these have led to the vertically integrated industry and the oligopsony market for surfclams and ocean quahogs which now exists according to the NMFS report.

Lastly, an additional type of problem that can result from concentration of ownership has to do with the lifestyle of fishing households and fishing communities. There could be significant philosophical support for the maintenance of a fishery composed of many diverse individuals. According to this opinion, even if concentration will not produce market power problems, it is something to be avoided for its own sake. However, this trade-off in economic returns from the fishery resource to maintain a social or community structure is a policy and prioritization question the Councils must sort through (NMFS 2007).

Total Allocations Being Fished

Table 14 shows surfclam and ocean quahog cage tag utilization by small and large allocation owners for the 2004-2006 and 2017 periods. In 2017, 35.7% of the surfclam quota was unused. The number of unused allocations for surfclams (based on 67 allocation holders) was 5, about 7%. For ocean quahog in 2017, 40.9% of the quota was unused. The number of unused allocations for ocean quahog (based on 37 allocations holders) was 15, about 41%. Of those allocation holders using their tags, 64% of surfclams and 59% of ocean quahog tags were used.

In the ocean quahog fishery, the proportion of cage tags not used is higher for small allocation owners when compared to large allocation owners for 2004-2006 and 2017. In the surfclam fishery, the proportion of cage tags not used is higher for small allocation owners when compared to large allocation owners for all years except 2017. In 2017, the small allocation owners left 11% of their cage tags unharvested, while large allocation owners did not use 39% of their cage tags. However, a closer look at the surfclam allocation ownerships for 2017, indicated that a large number of small allocation owners may also be owners of large allocations via partnerships and other complex contracting and business practices that are prevalent in the fisheries. It is possible that some of the owners that have both, small and large surfclam allocations, may be harvesting the tags associated with their small allocations first before utilizing the tags associated with their larger allocations. For the years evaluated, the percentages of unused cage tags for small and large allocations owners tend to be relative closer to each other when larger proportions of the available quotas are harvested.

Transfer of Allocations

In these fisheries both permanent and temporary transfers occur. Temporary transfers can only be tracked annually and occur for many reasons. Bank lenders hold approximately 1/5 of the allocations; so, temporary transfers of tags by bank lenders and between related and unrelated business and corporate entities are frequent. In 2016, 41% of the surfclam tags and 26% of the ocean quahog tags were temporarily transferred (Northern Economics, Inc. 2019).

Table 14. Atlantic surfclam and ocean quahog allocation usage for 2004-2006 and 2017.

Year	Quota (million bushels)	Landings (million bushels)	% of quota unused	Total # allocations issued	Total # allocations that did not use any cage tags	Allocation owner by size*	% of total quota owned	# cage tags issued	# cage tags used	% cage tags unused
Surfclam										
2004	3.400	3.138	7.7%	84	2	Small Owners (43)	17.5%	18,641	17,068	8.4%
						Large Owners (41)	82.5%	87,614	80,821	7.8%
2005	3.400	2.744	19.3%	82	6	Small Owners (42)	18.2%	19,389	15,519	20.0%
						Large Owners (42)	81.8%	86,893	71,136	18.1%
2006	3.400	3.057	10.1%	82	7	Small Owners (41)	17.6%	18,731	13,381	28.6%
						Large Owners (40)	82.4%	87,551	81,347	7.1%
2017	3.400	2.186	35.7%	67	5	Small Owners (33)	11.7%	12,430	11,226	9.7%
						Large Owners (34)	88.3%	93,852	57,338	38.9%
Ocean Quahog										
2004	5.000	3.890	22.2%	56	9	Small Owners (28)	3.3%	5,146	3,172	38.4%
						Large Owners (28)	96.7%	150,887	116,887	22.5%
2005	5.333	3.006	43.6%	56	19	Small Owners (28)	3.3%	5,483	2,460	55.1%
						Large Owners (28)	96.7%	160,944	131,036	18.6%
2006	5.333	3.147	41.0%	56	23	Small Owners (28)	3.3%	5,483	2,253	58.9%
						Large Owners (28)	96.7%	160,944	94,231	41.5%
2017	5.333	3.149	40.9%	37	15	Small Owners (18)	4.0%	6,626	3,363	49.2%
						Large Owners (19)	96.0%	159,738	93,972	41.2%

*Allocations were considered to be “Small” or “Large” by sorting them from the smallest number of bushels to the largest, and then using the median to break them into two groups.

Landings, Quota Utilization, and Market Trends

Surfclams and ocean quahogs are processed into a variety of different products. The dominant use of surfclams has been in the "strip market" to produce fried clams. In recent years (Mid-2000s on), however, they have increasingly been used in chopped or ground form for other products, such as high-quality soups and chowders (MAFMC 2010). The dominant use of ocean quahogs has been in products such as soups, chowders, and white sauces. Their small meat has a sharper taste and darker color than surfclams, which has not permitted their use in strip products or the higher-quality chowders products (MAFMC 2010).

The quotas and landings levels and the percent of quota landed from 1980-2017 for surfclams and ocean quahogs are shown in Figures 13 and 14, respectively. For most years from 1990 (when the ITQ system was implemented) to 2003, the surfclam harvest levels were near or at full quota level. However, for the last decade or so (2008-2017), surfclam production has been below the quota. Surfclam landings have not reached the quota of 3.4 million bushels since it was set in 2004. It should be noted that both changes in landings and the changes in quota levels affect the quota utilization shown in Figures 13 and 14. Surfclam landings in 2017, reached a record low at 2.2 million bushels, the lowest landings level since the ITQ system was implemented which also corresponds to the lowest quota utilization (percentage of quota landed). In the last fifteen years, a downward trend in landings of surfclams is observed (Figure 13).

On the other hand, ocean quahog landings have consistently been below the quota for most years since 1990. Industry utilization of ocean quahogs has varied across the years, influenced by market conditions and the costs of harvesting. There was a shift toward greater utilization of quahogs in 1997 and 1998. Both years saw almost all of the quota harvested, while surfclam quota was left unharvested. However, this trend reverted back to the historical norm in 1999 as fuel prices spiked, when it became more expensive to harvest ocean quahogs that are found farther offshore. Higher fuel prices combined with increasing scarcity of dense ocean quahog beds resulted in an overall decline in ocean quahog harvests (MAFMC 2010). During 2001-2004, there was again a brief increase in ocean quahogs landings, with 80% or more of the ocean quahog quota landed. In the last fifteen years (2003-2017), a downward trend in landings of ocean quahogs is observed (Figure 14). Ocean quahog landings in 2017, were 3.1 million bushels, which also corresponds to one of the lowest quota utilizations (percentage of quota landed) since the ITQ system was implemented in 1990. Ocean quahog landings have not reached the quota of 5.3 million bushels since it was set in 2005.

According to industry members, the reduction in landings for surfclams and ocean quahogs in the mid-2000s was due to several factors related to reduction in product marketing/advertisement (e.g., clam chowder), limited markets, and competition from imported clams that are available from a relatively large number of countries, including Canada, Thailand, Vietnam, China, and Chile (MAFMC 2009, 2010, 2013; Mitchell et al. 2011). Surfclam and ocean quahog landings have been mainly constrained by market limitations.

Industry members have consistently asked the MAFMC to set the surfclam and ocean quahog quotas at levels lower than the overall ABC but to set the quotas for these two species at levels that are much larger than the market demand (landings) since the mid-2000s.

In 2017, there were companies that reported purchases of surfclam and/or ocean quahog from the industrial fisheries outside of Maine. These 9 companies operated 15 different facilities located in various state. Some of these companies have facilities in multiple states (section 6.4.4). For the most part, processors aim to meet supply schedules set by their customers which are large consumer good companies, such as Progresso or Campbell's, or large food service companies, such as Sysco. This requires that most clams are harvested and processed to meet set schedules.

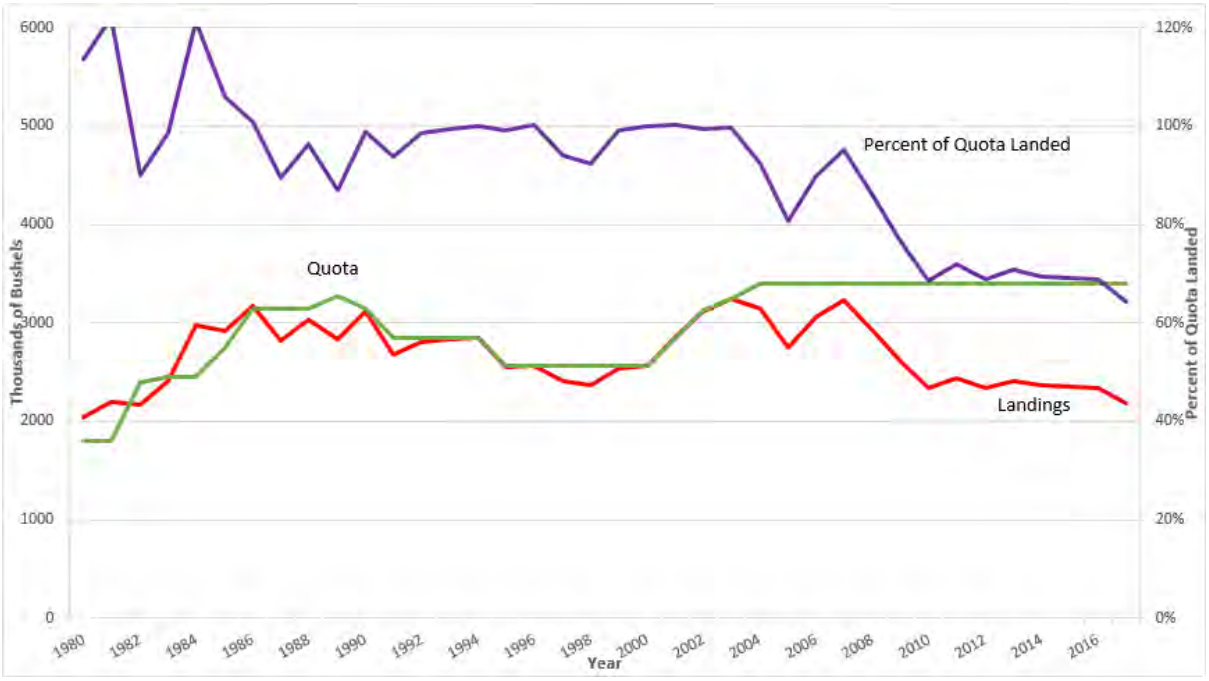

Figure 13. Surfclam landings, quotas, and percent of quotas landed, 1980-2017.
Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

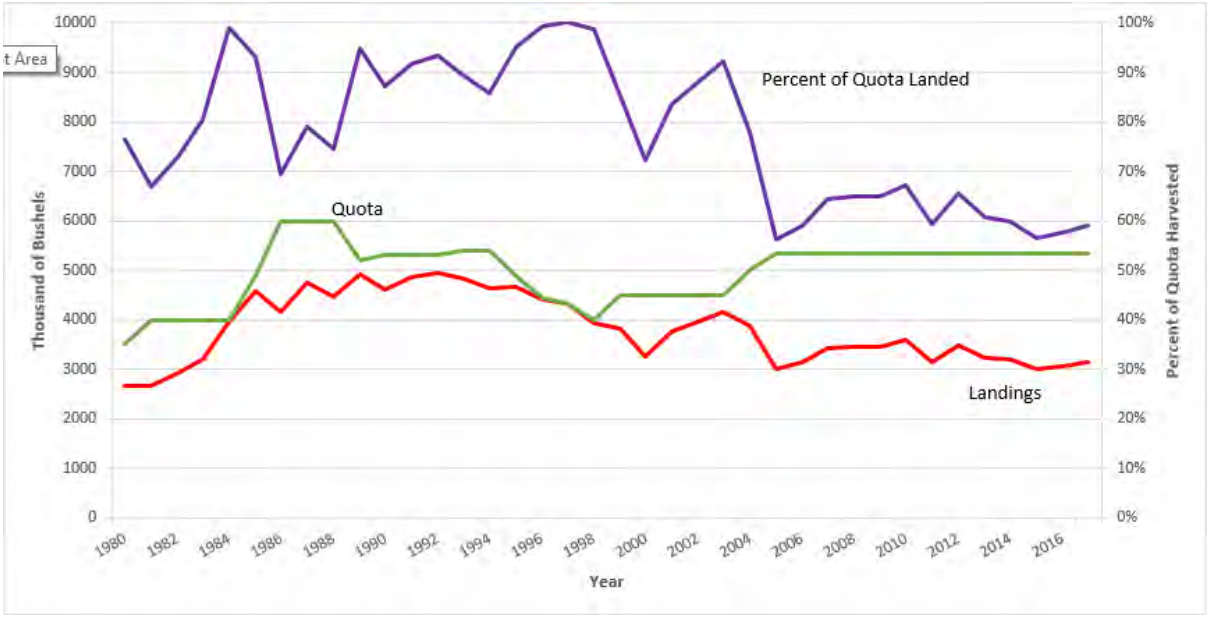

Figure 14. Ocean quahog landings, quotas, and percent of quotas landed, 1980-2017.
Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

Ex-vessel Revenues and Prices

Figures 15 to 18 show ex-vessel revenues and prices for surfclams and ocean quahogs in nominal and real values. As previously indicated (see Trends in Consolidation Section), a series of conditions resulted in a substantial portion of the industrial fleet leaving the clam fishery in 2005; in addition, increasing foreign competition and limited markets have resulted in decrease in landings (see Landings, Quota Utilization, and Market Trends Section). However, nominal ex-vessel prices remained relative stable during that last 10-15 years (Figures 17 and 18).

After the large surfclam ex-vessel revenue decrease in 2005, ex-vessel revenues increased to the 2003 levels, and then have a decreasing trend through 2010 (Figure 15). From 2010 through 2017, surfclam ex-vessel revenues have shown a slight upward trend despite low quota utilization (Figure 13) and significant decrease in the efficiency of harvesting operations (Figure 19). Ex-vessel prices for surfclam have been relatively stable for the 2010 through 2017 period with slight increases in more recent years (Figure 17).

Ex-vessel price for both species were relatively flat for the 2003 to 2007 period. In 2008, there was a slight increase in the price for both species that is likely related to the large increase in fuel costs in 2008, processors reported levying fuel surcharges on their customers for at least some period of time to cover increased harvesting costs. Ex-vessel price for both species show a steady upward trend from 2009-2017 (Figures 17 and 18).

However, Figures 17 and 18, show that the mean real price (adjusted prices) for both species have shown a downward trend for the 2003-2017 time period. While these trends by themselves yield no real answers about market power, taken together with increasing production prices, they do suggest that vessels were likely not improving their economic position.

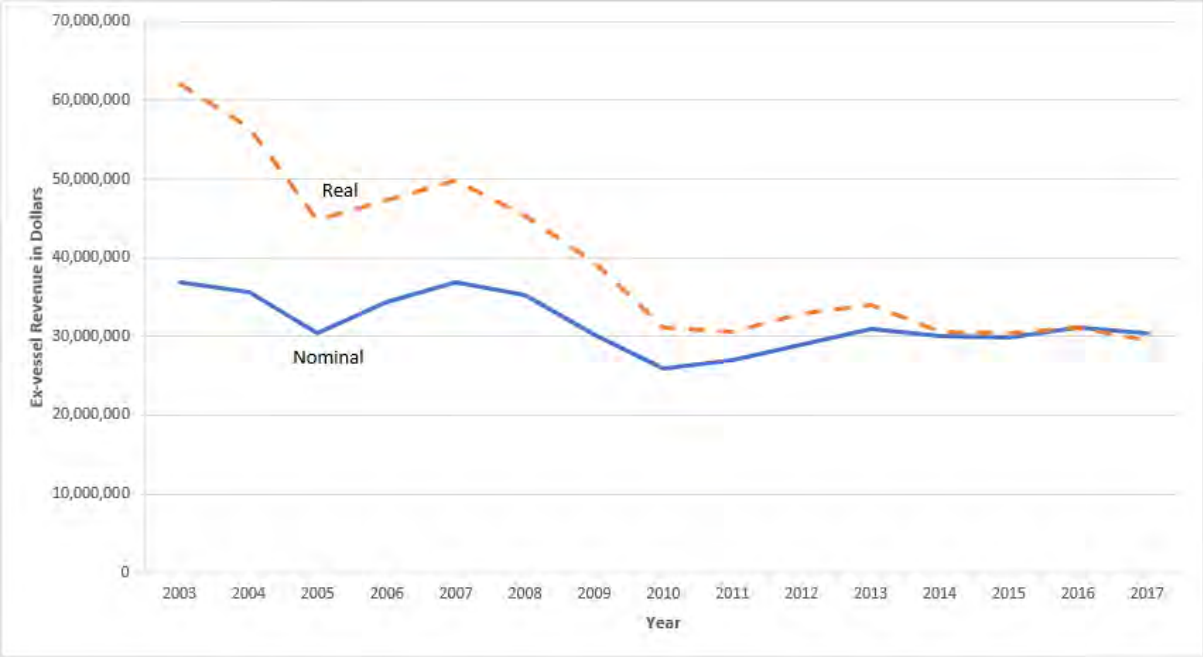

Figure 15. Surfclam ex-vessel revenue, 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

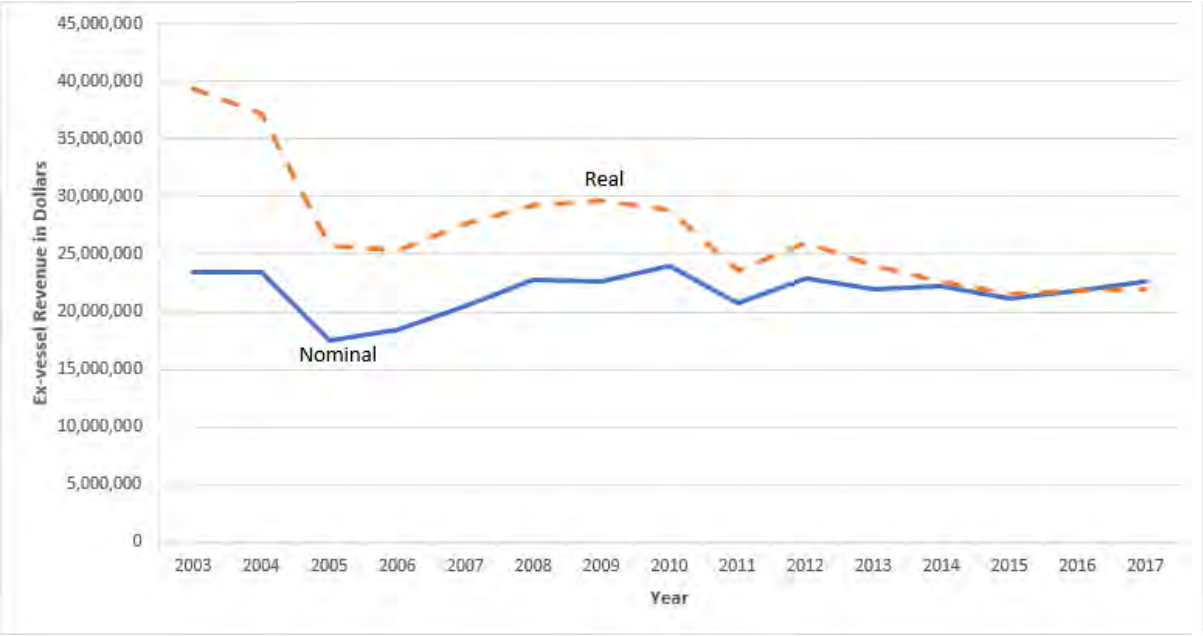

Figure 16. Ocean Quahog ex-vessel revenue, 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

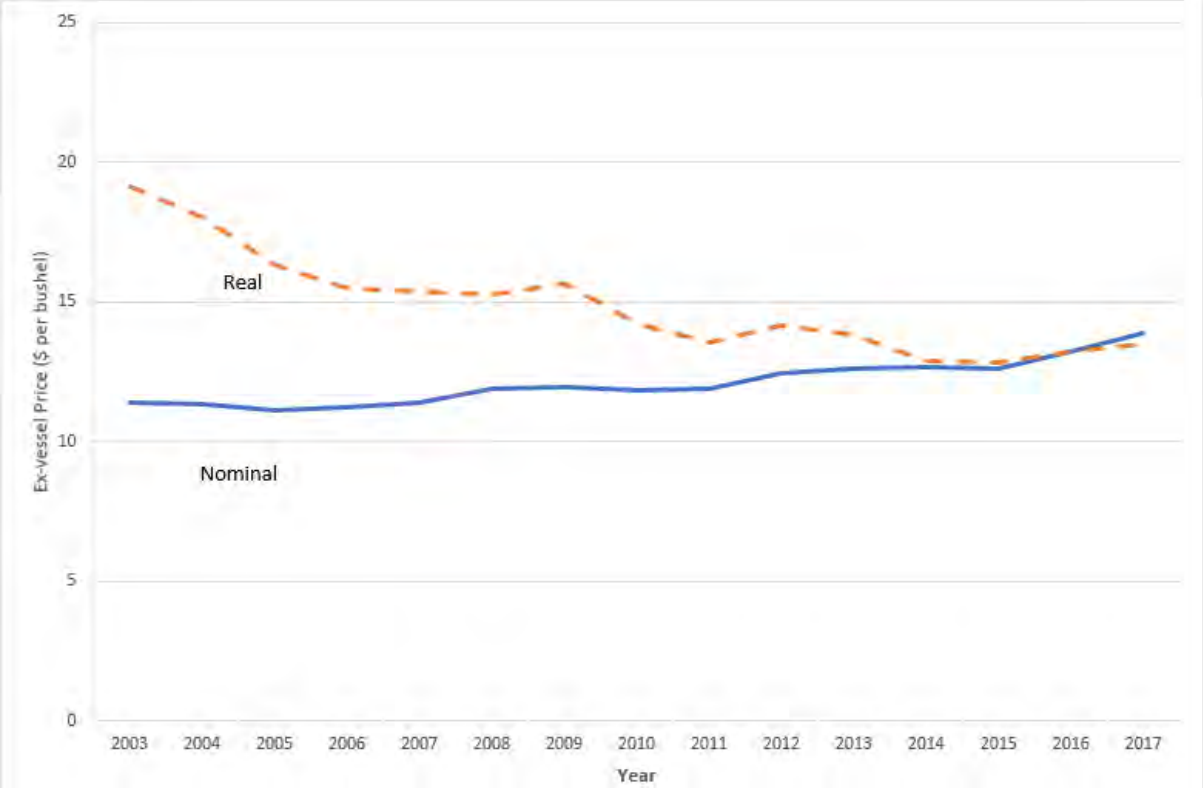

Figure 17. Surfclam ex-vessel price ($/bu), 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

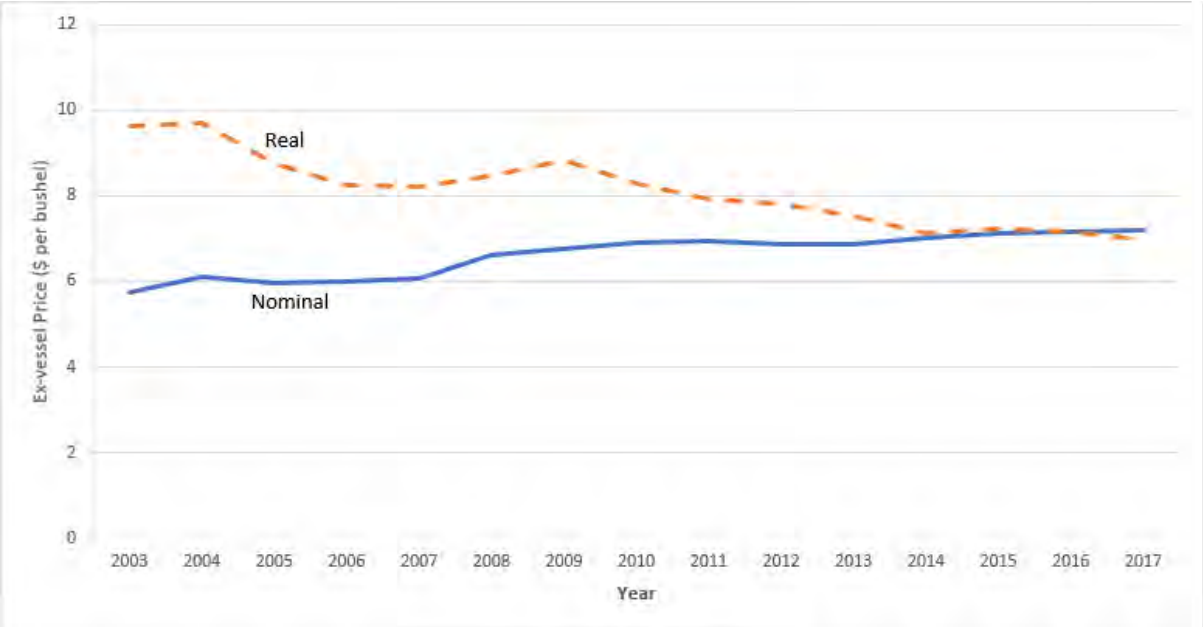

Figure 18. Ocean quahog ex-vessel price ($/bu), 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

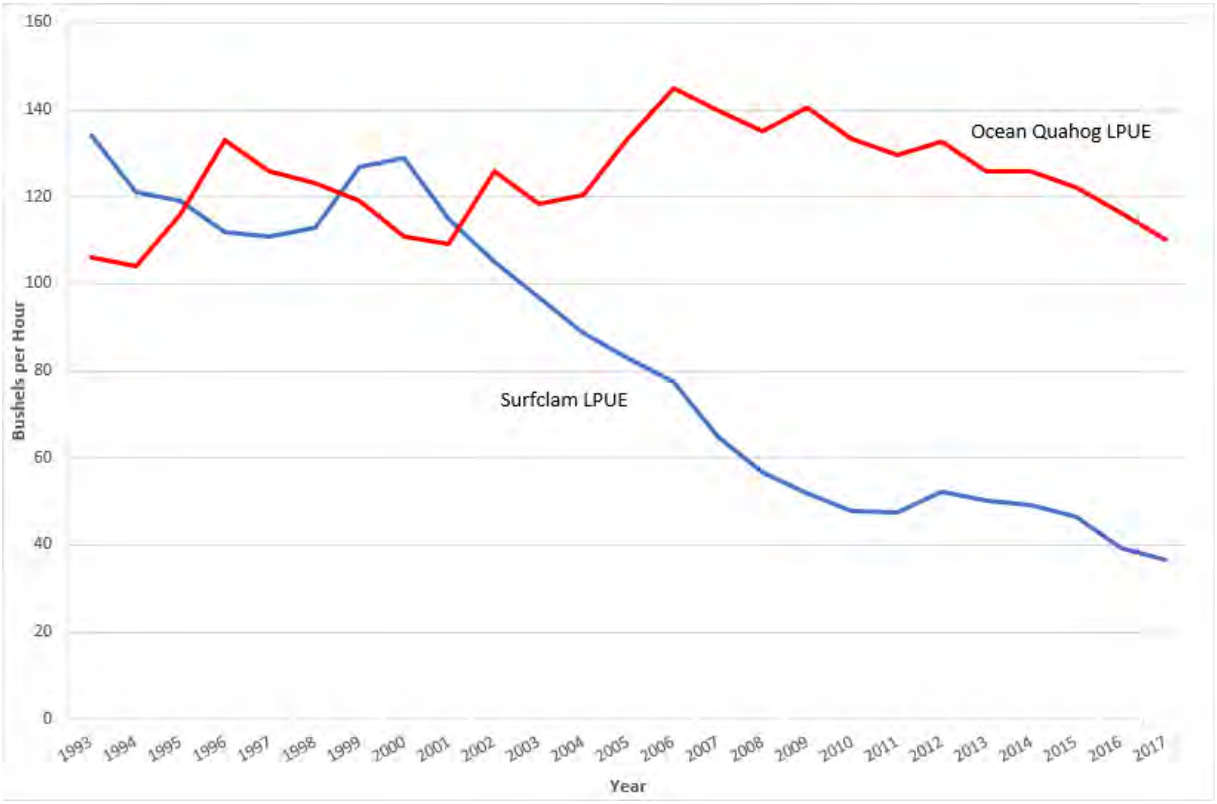

Figure 19. Surfclam and ocean quahog landings per unit effort (LPUE), 1993-2017.
Source: NMFS Clam Vessel Logbook Reports.

Economic Performance - Harvesting Sector

Prior to the implementation of the ITQ program, excess harvesting capacity (overcapitalization) was a major problem and led to closures very quickly due to effort/time restrictions. In fact, the excess capacity was such, that it was believed that an increase in the annual quota within the range that at that time constituted optimum yield would have not alleviated this problem but could have further encouraged the existing vessels to increase vessel capacity through gear modifications (MAFMC 1988).

Given the large economic inefficiencies resulting from the overcapitalization of the fleet, the harvesting, and processing industries which depend upon them, were only marginally profitable. Furthermore, during the pre-ITQ period, the composition of the entire fleet shifted to larger vessels (MAFMC 1988). Larger vessels harvest more output per unit of input (on site). However, under effort management restrictions that constrained the time that vessels could fish for surfclams, both, small and large vessels harvested similar quantities of surfclams. As such, overall, larger vessels employed more fuel, labor, and capital services per unit of output when compared to smaller vessels. The benefit of larger unit output per unit of allocated inputs once the vessel has reached a fishing site were not realized under effort time/time restrictions (Weninger and Strand 2003).

In theory, an important benefit of ITQ systems are efficiency gains that may result from the implementation of property rights. Walden et al. (2012) pointed out that under an ITQ system,

vessels with the lowest harvesting costs can expand their catch by buying or leasing quota share from other, higher-cost vessels, leading to lower overall harvest costs and more efficient outcomes for society.

Theoretically, under the ITQ system, each harvester is able to use the lowest cost combination of fishing inputs (e.g., fuel, labor, materials) since they are allocated an exclusive share of the annual quota. In other words, they are incentivized to harvest the resource in a manner that is most efficient, and therefore, maximizing profits for their fishing operations as well as the industry as a whole.

Productivity is a key economic indicator at the household, firm, industry and national levels, and is a critical factor in economic growth (Färe, Grosskopf, and Margaritis 2008 cited in (Walden et al. 2014)). A productivity index can be used to measure the combined effects of changes in inputs and outputs in a fishery. More specifically, a productivity index can be used to describe how landings from fishing vessels and input to produce those landings change through time. This indicator is of importance, because changes in productivity are directly tied to changes in profit. As an example, if prices for the clams landed are stable, and the inputs (such as fuel used on a fishing trip) do not change, profits can increase if vessels are able to produce more landings (outputs) for a given level of inputs.

Productivity changes in the Atlantic surfclam and ocean quahog ITQ fisheries have been conducted by various researchers. Walden et al. (2014) conducted an evaluation of productivity change for all catch share fishery programs in the U.S. and Thunberg et al. (2015) measured changes in multi-factor productivity in U.S catch share fisheries. Multi-factor productivity (MFP) change is a measure of changes in quantities of inputs used to harvest fish and outputs produced. Changes in the MFP can be used to capture multiple dimensions of economic change associated with catch share programs (e.g., changes in product value and mix, costs and efficiency) in a single metric through time.

MFP may improve either by harvesting more fish with the same amount of inputs or by harvesting the same amount of fish using fewer inputs. It is expected that by ending the “race to fish” catch share programs may lead to improved productivity through the ability to better plan harvesting activities to change the mix of outputs and/or make better use of capital and other inputs. Furthermore, productivity gains may also be obtained through the transfer of quota from less to more efficient vessels (Walden et al. 2012).

Since changing resource conditions can influence output, the values reported by Walden et al. (2014) and Thunberg et al. (2015) were adjusted using a Lowe index to account for changes in biomass to estimate MFP. For a detailed treatment of methods and data see Walden et al. (2014) and Thunberg et al. (2015).

Walden et al. (2014) concluded that over the long-term, the biomass adjusted MFP (MFP is defined as a ratio of aggregate outputs to aggregate inputs) has remained above the pre-ITQ period baseline (1987-1989) in the surfclam fishery from 1990 through 2012 (the last year evaluated in the analysis). On a yearly basis, the biomass-adjusted productivity increased until 2003, then declined during the last eight years of the time period (Figure 20). Beginning in year 2000, the input index

started to increase, indicating that more inputs were being used to harvest the quota. This outcome is consistent with a declining biomass. When the stock declines and becomes more dispersed spatially, vessels will need to employ more inputs to harvest the same amount of output.

For ocean quahogs, the adjusted multi-factor productivity was above the pre-ITQ baseline for 19 of 23 years (Walden et al. 2014). The value of 1.82 in year 2012 indicates that the fishery was 82% more productive in 2012 than in the base line period. Most of the years showed slight increases or decreases in yearly productivity (Figure 20). The largest increase was in 21% in 2005 (1.21; year-to-year MFP change), while the largest decline was 13% in 2000 (0.87). For the entire period, the average year-to-years change was thee percent (1.03).

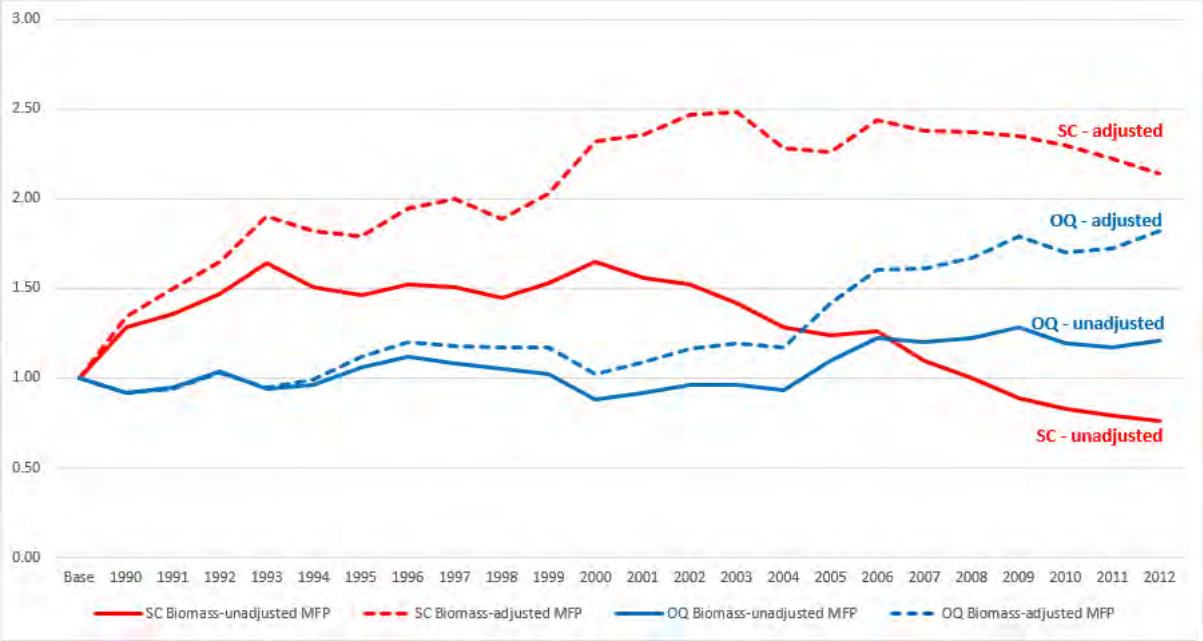

Figure 20. Biomass-adjusted and biomass-unadjusted marginal factor productivity for surfclam and ocean quahog, base period (1987-1989) and 1990-2012.

Brinson and Thunberg (2016) employed the Gini coefficient to measure changes in the distribution of the use of quota in terms of catch share revenue among active vessels for several catch share programs. These authors indicated that the trends in the Gini coefficient over time and not the absolute value are important in assessing evenness or equality. A Gini coefficient of 0 means that catch share revenues are the same for all active vessels, while a value approaching 1 means that catch shares revenues are highly concentrated in a single or among a small number of vessels. A decreasing Gini coefficient is indicative of increasing evenness or equality in catch share revenues, whereas an increasing Gini coefficient indicates decreasing evenness, or its opposite increasing inequality among participating vessels.

The Gini coefficient for surfclam during the first year of the ITQ program implementation was 0.37 (1990), a 16% increase from the 1987-1990 baseline period (0.32). The Gini coefficient has been steadily increasing since the surfclam ITQ system was implemented and reached a value of 0.50 in 2013 (the last year evaluated by the authors). For ocean quahogs, the Gini coefficient was 0.51 during the baseline period and it decreased to 0.48 during the first year of the ITQ program

implementation, and then steadily increased to 0.61 for most of the early 1990s to early 2000s. In 2013, the Gini coefficient for the ocean quahog fishery was 0.59 (Table 15). The overall performance analysis (assessing set of all indicators developed) for 16 catch share programs evaluated by Brinson and Thunberg (2016) indicated that in general terms the accumulation of ownership share may be less of a concern than consolidation in the use of quota, which includes the use of quota by entities as well any quota lease from other share owners.

Table 15. The Gini coefficient for the surfclam and ocean quahog catch share programs.

Catch Share Program	Baseline period (average 1987-1989)	Year 1	Average years 1-3	Average years 1-5	Last 5 year average	2013
Surfclam	0.32	0.37	0.45	0.46	0.49	0.50
Ocean Quahog	0.51	0.48	0.61	0.61	0.61	0.59

Source: Brinson and Thunberg (2016).

ITQ Program Review

The Council contracted Northern Economics, Inc. to develop a report for the review of the Atlantic surfclam and ocean quahog ITQ program. NOAA Catch Share Policy prepared in 2010 indicates that periodic reviews are expected of all catch share programs (CSPs), regardless of whether the program is a LAPP or when it was put in place. The review conducted by Northern Economics, Inc. fulfilled the program review requirements as described in the guidance for catch share reviews (NMFS 2017b). The review was completed and submitted to NMFS in June 2019 following a public comment period.

7.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This Environmental Assessment (EA) analyzes the expected impacts of each alternative on each VEC. When considering impacts on each VEC, the alternatives are compared to the current condition of the VEC. The alternatives are also compared to each other. The No Action alternatives describe what would happen if no action were taken. For all options considered in this document, the "no action" alternative would have the same outcomes as *status quo* management, therefore, these alternatives are at times described as "no action/*status quo*."

Environmental impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). Table 16 summarizes the guidelines used for each VEC to determine the magnitude and direction of the impacts described in this section.

The recent conditions of the VECs include the biological conditions of the target stocks, non-target stocks, and protected species over the most recent five years (sections 6.1 and 6.3). They also include the fishing practices and levels of effort and landings in the surfclam and ocean quahog fisheries over the most recent five years, as well as the economic characteristics of the fisheries over the most recent three to five years (depending on the dataset; section 6.4). The recent conditions of the VECs also include recent levels of habitat availability and quality (section 6.2). The current condition of each VEC is described in Table 17.

This EA analyzes the impacts of the alternatives described fully under section 5.0. For ease reference, those alternatives are listed here.

Excessive Share Alternatives

- Alternative 1: No Action/*Status Quo* (No limit or definition of an excessive share is included in the FMP)
- Alternative 2: Single Cap – Quota share ownership cap-only with unlimited possession of cage tags allowed during the fishing year
  - Sub-Alternative 2.1: Quota share ownership cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 2.2: Quota share ownership cap at 49%
  - Sub-Alternative 2.3: Quota share ownership cap at 95%
- Alternative 3: Cap – Applies to possession of both owned quota share and cage tags
  - Sub-Alternative 3.1: Cap based on highest level of tag possession in the ownership and transfer data, 2016-2017
  - Sub-Alternative 3.2: Cap at 40%
  - Sub-Alternative 3.3: Cap at 49%
- Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a second cap on possession of cage tags
  - Sub-Alternative 4.1: Two-part cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation
  - Sub-Alternative 4.3: Quota share ownership cap at 30% and cage tag cap at 60%

- Sub-Alternative 4.4: Two part-cap - Quota share ownership cap and annul allocation cap based on possession of cage tags; Surfclams: 35/65% and Ocean quahogs: 40/70%
- Alternative 5: Quota share ownership cap-only at 40% with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota
- Alternative 6: Quota share ownership cap-only at 49% with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota

Excessive Shares Review Alternatives

- Alternative 1: No Action/*Status Quo* (There are no requirements for review of implemented excessive shares measures)
- Alternative 2: Require periodic review of excessive shares measures that the Council adopts at specific intervals. At least every 10 years or as needed

Framework Adjustment Process Alternatives

- Alternative 1: No Action/*Status Quo* (No changes to the current list of measures that can be addressed under the framework adjustment process)
- Alternative 2: Add excessive shares cap level to the list of measures to be adjusted via framework

Multi-Year Management Measures Alternatives

- Alternative 1: No Action/*Status Quo* (No changes to the process to set surfclam and ocean quahog management specifications for up to 3 years)
- Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule

The alternatives are not compared to a theoretical condition where the fisheries are not operating. These fisheries have occurred for many decades and are expected to continue into the foreseeable future. The nature and extent of the management programs for these fisheries have been examined in detail in EAs and Environmental Impact Statements (EISs) prepared for previously implemented management actions under the Atlantic Surfclam and Ocean Quahog FMP.

When considering overall impacts on each VEC, both surfclam and ocean quahog commercial fisheries are considered. This action does not propose any modifications to other management components (e.g., annual quota, minimum size, reporting requirements) and as such are not expected to affect the commercial fisheries in a manner that would change the impacts for any of the VECs considered.

In general, alternatives which may result in overfishing or an overfished status for target and non-target species may have negative biological impacts for those species, compared to the current condition of the VEC. Conversely, alternatives which may result in a decrease in fishing effort, resulting in ending overfishing or rebuilding to the biomass target, may result in positive impacts for those species by resulting in a decrease in fishing mortality (Table 16).

For the physical environment and habitat, alternatives that improve the quality or quantity of habitat or result in a decrease in fishing effort are expected to have positive impacts. Alternatives that degrade the quality or quantity, or increase disturbance of habitat are expected to have negative

impacts (Table 16). In addition, alternatives that result in continued fishing effort may result in slight negative impacts. The commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. The effects of clam dredges are short term and minimal because the fisheries occur in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats (section 6.2.3). Even in areas where habitat may be impacted by commercial gear or vessels, these areas are typically commonly fished by many vessels over many decades and are unlikely to see a measurable improvement in their condition in response to minor changes in measures or short-term changes in effort in an individual commercial fishery.

For protected species, consideration is given to both ESA-listed species and MMPA-protected species. ESA-listed species include populations of fish, marine mammals, or turtles at risk of extinction (endangered) or endangerment (threatened). For endangered or threatened species, any action that results in interactions with or take of those species or stocks is expected to have negative impacts, including actions that reduce interactions. Actions expected to result in positive impacts on ESA-listed species include only those that contain specific measures to ensure no interactions with protected species (i.e., no take). By definition, all species listed under the ESA are in poor condition and any take has the potential to negatively impact that species' recovery.

Under the MMPA, the stock condition of each protected species varies, but all are in need of protection. For marine mammal stocks/species that have their PBR level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 16). The impacts of each alternative on the protected resources VEC take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have exceeded or are in danger of exceeding their PBR level.

Socioeconomic impacts are considered in relation to potential changes in landings and prices, and by extension, revenues, compared the current fisheries conditions. Alternatives which could result in an increase in landings are generally considered to have positive socioeconomic impacts because they could result in increased revenues; however, if an increase in landings leads to a decrease in price or a decrease in SSB for any of the landed species, then negative socioeconomic impacts could occur. In addition, measures that would curtail entities from exerting market power and therefore not decreasing competition would have positive socioeconomic impacts. Lastly, measures that would result in community disruptions as result of additional consolidation (e.g., decrease in the number of independent harvesters, decrease in employment) would have negative socioeconomic impacts.

Excessive consolidation, in an economic context, is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one

where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

Expected Changes in Fishing Effort Under Alternatives Considered

The expected impacts to each VEC are derived from both consideration of the current condition of the VEC and the expected changes in fishing effort under each of the alternatives. It is not possible to quantify with confidence how effort will change under each alternative; therefore, expected changes are typically described qualitatively. However, the excessive shares cap level alternatives presented in this document or the other alternatives analyzed (i.e., excessive shares measures review; framework adjustment process; and multi-year management measures) are purely administrative and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted.

Table 16. General definitions for impacts and qualifiers relative to resource condition (i.e., baselines) summarized in Table 17 below.

General Definitions				
VEC	**Resource Condition**	**Impact of Action**		
		Positive (+)	Negative (-)	No Impact (0)
Target and non-target Species	Overfished status defined by the MSA	Alternatives that maintain or are projected to result in a stock status above an overfished condition*	Alternatives that maintain or are projected to result in a stock status below an overfished condition*	Alternatives that do not impact stock / populations
ESA-listed protected species (endangered or threatened)	Populations at risk of extinction (endangered) or endangerment (threatened)	Alternatives that contain specific measures to ensure no interactions with protected species (i.e., no take)	Alternatives that result in interactions/take of listed species, including actions that reduce interactions	Alternatives that do not impact ESA-listed species
MMPA protected species (not also ESA-listed)	Stock health may vary but populations remain impacted	Alternatives that maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammals that could result in takes above PBR	Alternatives that do not impact MMPA protected species
Physical environment / habitat / EFH	Many habitats degraded from historical effort (see condition of the resources table)	Alternatives that improve the quality or quantity of habitat	Alternatives that degrade the quality/quantity or increase disturbance of habitat	Alternatives that do not impact habitat quality
Human communities (socioeconomic)	Highly variable but generally stable in recent years (see condition of the resources table for details)	Alternatives that increase revenue and social well-being of fishermen and/or communities	Alternatives that decrease revenue and social well-being of fishermen and/or communities	Alternatives that do not impact revenue and social well-being of fishermen and/or communities
Impact Qualifiers				
A range of impact qualifiers is used to indicate any existing uncertainty	Negligible	To such a small degree to be indistinguishable from no impact		
	Slight (sl), as in slight positive or slight negative	To a lesser degree / minor		
	Moderate (M) positive or negative	To an average degree (i.e., more than "slight", but not "high")		
	High (H), as in high positive or high negative	To a substantial degree (not significant unless stated)		
	Significant (in the case of an EIS)	Affecting the resource condition to a great degree, see 40 CFR §1508.27.		
	Likely	Some degree of uncertainty associated with the impact		

*Actions that will substantially increase or decrease stock size, but do not change a stock status may have different impacts depending on the particular action and stock. Meaningful differences between alternatives may be illustrated by using another resource attribute aside from the MSA status, but this must be justified within the impact analysis.

Table 17. Baseline conditions of VECs considered in this action, as summarized in section 6.

VEC		Baseline Condition	
		Status/Trends, Overfishing?	**Status/Trends, Overfished?**
Target stocks (section 6.1.1)	**Atlantic surfclam**	No	No
	Ocean quahog	No	No
Non-target species (principal species listed in section 6.1.2)	**Moon snail**	Unassessed	Unassessed
	Sea scallop	No	No
	Little skate	No	No
	Winter skate	No	No
Habitat (section 6.2)		Commercial fishing impacts are complex and variable and typically adverse; Non-fishing activities had historically negative but site-specific effects on habitat quality.	
Protected resources (section 6.3)	**Sea turtles**	Leatherback and Kemp's ridley sea turtles are classified as endangered under the ESA; loggerhead (NW Atlantic DPS) and green (North Atlantic DPS) sea turtles are classified as threatened.	
	Fish	Atlantic salmon, shortnose sturgeon, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are classified as endangered under the ESA; the Atlantic sturgeon Gulf of Maine DPS is listed as threatened; cusk, alewife, and blueback herring are candidate species	
	Large whales	All large whales in the Northwest Atlantic are protected under the MMPA. North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. Pursuant to section 118 of the MMPA, the Large Whale Take Reduction Plan was implemented to reduce humpback, North Atlantic right, and fin whale entanglement in vertical lines associated with fixed fishing gear (sink gillnet and trap/pot) and sinking groundlines.	
	Small cetaceans	Pilot whales, dolphins, and harbor porpoise are all protected under the MMPA. Pursuant to section 118 of the MMPA, the Harbor Porpoise Take Reduction Plan and Bottlenose Take Reduction Plan was implemented to reduce bycatch of harbor porpoise and bottlenose dolphin stocks, respectively, in gillnet gear.	
	Pinnipeds	Gray, harbor, hooded, and harp seals are protected under the MMPA.	
Human communities (section 6.4)		Surfclam and ocean quahog stocks support substantial industrial fisheries and related support services. 2017 estimated ex-vessel revenues were $31 and $23 million for surfclams and ocean quahogs respectively. Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine. The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products. In 2017, there were 67 surfclam and 37 ocean quahog allocations owners at the beginning of the fishing year. A total of 48 vessels were active in these fisheries in 2017, including a handful of independent vessels (less than 5).	

7.1 Impacts on Atlantic Surfclam and Ocean Quahog (Managed Species) and Non-Target Species

7.1.1 Excessive Shares Cap Alternatives

Under alternative 1 (no action/*status quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. This alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0). The no action alternative is expected to have no impact on the prosecution of these clam fisheries, including landings levels, fishery distribution, or fishing methods and practices. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species). Alternative 1 is expected to have the same impacts (no impacts) on target species as alternatives 2-6 described below.

The no action alternative is not expected to impact non-target species caught in the surfclam and ocean quahog commercial fisheries. All of the species most commonly caught on directed clam trips have positive stock status, except for moon snails which are unassessed. As indicated above, the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices are not expected to change under this alternative. Therefore, the no action alternative is expected to have no impact on interaction of these fisheries with non-targeted species. Alternative 1 is expected to have the same impacts (no impacts) on non-target species as alternatives 2-6 described below.

Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. These alternatives are expected to have no impact on the prosecution of these surfclam and ocean quahog fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Alternatives 2-6 are expected to have no impacts (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Relative to each other, and alternative 1 (no action), alternatives 2-6 would have neutral on both target species, and non-target species.

7.1.2 Excessive Shares Review Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

7.1.3 Framework Adjustment Process Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), the list of management measures that have been identified in the FMP that could be addressed via framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap level to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

7.1.4 Multi-Year Management Measures Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for

up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fisheries resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

Although there are no impacts on the VECs, alternative 2 would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

7.2 Impacts on the Physical Habitat and EFH

As described in section 7.0, the commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. The effects of clam dredges are short term and minimal because the fisheries occur in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats. As described in section 7.1, the alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

7.2.1 Excessive Shares Cap Alternatives

Under alternative 1 (no action/*status quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts (no impacts) on habitat, including EFH as alternatives 2-6 described below.

Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. Alternatives 2-6 are expected to have no impacts (direct or indirect) on habitat, including EFH. Relative to each other, and alternative 1 (no action), alternatives 2-6 would have neutral impacts on habitat, including EFH.

7.2.2 Excessive Shares Review Alternatives

Under alternative 1 (no action/*status quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.2.3 Framework Adjustment Process Alternatives

Under alternative 1 (no action/s*tatus quo*), the list of management measures that have been identified in the FMP that could be addressed via the framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap level to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.2.4 Multi-Year Management Measures Alternatives

Under alternative 1 (no action/s*tatus quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition,

under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.3 Impacts on Protected Resources

7.3.1 Excessive Shares Cap Alternatives

Under alternative 1 (no action/s*tatus quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue and therefore, the no action alternative is expected to have no impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Based on this information, and the fact that there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the fisheries, Alternative 1 is not expected to adversely affect any protected species provided in Table 11 (see section 6.3). For these reasons, the no action alternative is expected to have no impact on ESA-listed and/or MMPA-protected resources. Relative to alternatives 2-6, alternative 1 would have neutral impacts to protected species.

In addition, as described in section 7.1, the actions considered under alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. These alternatives are expected to have no impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Based on this information, and the fact that there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the fisheries, alternatives 2-6 are not expected to adversely affect any protected species provided in Table 11 (see section 6.3). For these reasons, alternatives 2-6 are expected to have no impacts (direct or indirect) on ESA-listed and/or MMPA-protected resources. Relative to each other, and alternative 1, alternatives 2-6 would have neutral impacts on protected species.

7.3.2 Excessive Shares Review Alternatives

As described above (under excessive shares cap alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations of the excessive shares review alternatives on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/s*tatus quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.3.3 Framework Adjustment Process Alternatives

As described above (under excessive shares cap alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations of the framework adjustment process alternatives on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/s*tatus quo*), the list of management measures that have been identified in the FMP that could be addressed via the framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap level to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of management measures that have been identified in the FMP that can be implemented or adjusted at any time during the year. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.3.4 Multi-Year Management Measures Alternatives

As described above (under excessive shares cap alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices.

The impact determinations on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/s*tatus quo*), the current management approach addressing surfclam and ocean quahog multi-year management specifications would continue. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.4 Impacts to Communities (Socioeconomic Impacts)

7.4.1 Excessive Shares Cap Alternatives

Under alternative 1 (no action/s*tatus quo*), no limit or definition of excessive shares accumulation is included in the FMP. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. Under this alternative, the current management approach to address excessive shares would continue.

Amendment 8 to the FMP states that it relies on antitrust laws already in force which would cover the abuse of excessive shares (MAFMC 1988). The Council's intent under Amendment 8 was to have NMFS monitor the concentration of ITQ (as ITQ owners have to apply to NMFS to transfer ITQ) and if it seemed that excessive consolidation was occurring, they would advise the U.S. DOJ which would determine if antitrust laws were being violated (Joel McDonald Personal Communication, July 16, 2017). However, this monitoring of quota shares could not occur. This is because the creation of new business entities (e.g., LLC's, etc.) with ITQ ownership, and the lack of a regulatory mechanism to identify corporate officers or business partnerships across individuals or entities involved in ITQ ownership hampered the ability to determine whether there was a concentration of quota ownership, and whether competitive conditions were being eroded in the quota share market over time.

During the development of alternatives for this amendment, staff at the Council and GARFO (including General Council) spoke to the Antitrust Division of the DOJ about the role that they might play in the monitoring of excessive shares in the Atlantic surfclam and ocean quahog

fisheries. The DOJ indicated that their Business Practice Process does provide a pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process[42] has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment.[43]

Therefore, this alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0), and a means to track and monitor ownership relative to that definition is needed.

As previously described in section 6.4.5, the Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries. The qualitative evidence reviewed in the Compass Lexecon Report indicates that is unlikely that market power is being exerted in the product market (monopoly/oligopoly) in these fisheries.

In addition, it is argued that the availability of substitutes is the most important of the factors listed in determining the elasticity of demand[44] for a specific commodity (Leftwich 1973; Awk 1988). Seafood demand in general appears to be elastic (NMFS 2007). In fact, for most species, product groups, and product forms, demand is elastic (Asche and Bjørndal 2003). There are many substitutes for most fish products, including other types of fish and sources of protein from other animals (NMFS 2007). When demand is highly elastic, and substitutes are amply available, small changes in price lead to large changes in the quantity demanded. The large reductions in output caused by price increases generally limit the potential for the significant exercise of market power (because moving the market price substantially requires withholding, without revenue, a large quantity).

While current levels of share consolidation do not appear to result in market power in the product market (monopoly/oligopoly), it could create market power in the input market (monopsony/oligopsony) for the fishery resource, or the quota share market. In fact, the CIE review of the Compass Lexecon Report indicated that more attention should be paid to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[45] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry with a small number processors and vessels predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern that monopolization in the output market (Walden 2011).

[42] For a detailed description of the Business Review process of the DOJ see: https://www.justice.gov/atr/business-reviews

[43] Sarah Heil, letter to Chis Moore, PhD, June 1, 2018.

[44] Price elasticity of demand is a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price when nothing but the price changes.

[45] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

Monopsony power could be exercised by processors over harvesters by reducing their demand for harvesting services, lowering the market price of harvesting services and increasing profits to the processing sector. However, if a processor owns a harvester, that firm would not benefit by underutilizing its own harvesting assets in order to depress the price of harvesting services. The processor will be motivated to use its own harvesting capacity when the incremental value of the harvest to the processor exceeds the incremental cost of harvesting, without regard for the effect of the additional harvesting on the market price of harvesting services. As a result, vertically integrated processors will increase harvest levels over those non-vertically integrated processors would choose were they to have influence over the market price of harvesting services (Mitchell et al. 2011). Lastly, from a social perspective, concentration of ownership and control could affect the social and community structure and participation in these fisheries. For example, from a social perspective, it is possible that under additional vertical integration the number of vessels participating in the fisheries could decerase further. Vertically integrated companies could choose to retire older less efficient vessels (for larger, newer, more efficient ones). In addition, there could be further departure of the few independent harvesters still participating in the fisheries. Vertical integration allows individual processors to exert control from the time a clam is harvested from the sea bed to the sale and transport of the final clam products from their facilities.

The no action alternative is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, under alternative 1, there would be no limit or definition of excessive shares accumulation included in the FMP. As such, it could potentially lead to one entity holding 100% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Alternative 1 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions. Alternative 1 could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.

Under alternative 2, a single cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership only with unlimited possession of cage tags allowed during the fishing year. Because alternative 2 is based on ownership-only values, none of the sub-alternatives discussed below account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. Participants in these fisheries have reported that there are various types of transactions involving cage tags that commonly occur, including cage tag transfers, long-term leases (e.g., five years or more), transfers of cage tags from bank lenders, and between both related and unrelated business entities.

This alternative allows leasing and other complex contracting and business practices (involving cage tag transfers) to continue without imposing a limit on the possession of cage tags during the fishing year; a limit would only be placed on quota share ownership. Essentially, these complex practices would be allowed to proceed without oversight.

Under Sub-Alternative 2.1, the single quota share ownership caps would be based on the highest level of quota share held by any individual or entity reported in the ownership data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period.[46] The single caps under this alternative would depend on the determination of quota share ownership levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (i.e., affiliate levels) are presented in Tables 2 and 3.

The highest level of quota share held (owned) by any individual or entity for surfclam was 28% under both the net actual percentage model and cumulative percentage model regardless of affiliation levels analyzed (Table 2). For example, when you consider results for the cumulative 100% model at the individual/business affiliation level, the highest level of quota share held by a single individual/business was 28% in each 2016 and 2017. This means that a single individual or business held (owned) 28% of the total surfclam ITQ allocation during 2016-2017. This level of ownership does not change when the family level affiliation is considered because that individual/business with the highest holdings did not report family members holding additional allocations. Similarly, the 28% quota share value did not change when the corporate officer level affiliation was considered, as that individual/business did not report any officer(s) in their company that have other interests in other companies that also hold surfclam quota shares. However, those levels do vary across affiliation levels for other individual entities that occur below the cap. Only maximum values are shown in that Table 2. The highest level of quota share held (owned) by any individual or entity for ocean quahogs was 22% under both the net actual percentage model and cumulative percentage model regardless of affiliation levels analyzed for the same reasons identified above for surfclams (Table 3).

As indicated above, the highest level of quota share held by any individual or entity during the 2016-2017 period was 28% for surfclams and 22% for ocean quahogs (Tables 2 and 3). If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in the fishery (i.e., 28%, 28%, 28%, and 16%; Table 18). This implies at least four entities holding surfclam quota, which may provide some protection against predation or foreclosure of competitors. If fully consolidated , a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in the fishery (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%; Table 18).[47] This implies at least five entities holding ocean quahog quota, which may provide some protection against predation or foreclosure of competitors. As previously indicated, "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails" (Walden 2011). However, as indicated in section 5.0, it is also possible that under all alternatives

[46] On average, for the 2016-2017 period, 67% of the surfclam quota and 58% of the ocean quahog quota were landed (Table 4).

[47] The resulting number of minimum entities under excessive shares cap alternatives 2 through 4 assume that market demand equals supply. When this is not the case, the leasing market could be disrupted (because available quota is larger than product demand) which could result in smaller firms or entities not associated with a processor being driven out of business.

evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

The number of entities above and below specific maximum cap values for the various alternatives and sub-alternatives discussed in section 7 are presented in Tables 18-21.[48] If the surfclam and ocean quahog cap levels described above (28% and 22%, respectively) had been implemented in 2017, all entities would have fallen at or below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.1 in the surfclam or ocean quahog fisheries.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. This sub-alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without oversight. Therefore, while sub-alternative 2.1 would establish a relatively low single cap quota share ownership of 28% that limits the exercise of market power through capping ownership levels for surfclams, it does not address the creation or exercise of market power through contractual control of quota.

Sub-alternative 2.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

[48] See Box 7.4 for a brief description of common terminology and definitions used in Tables 18-21.

Box 7.4. Terminology associated with the models and affiliation levels presented in Tables 18 to 21.	
Models	
Net Actual Percentage Model	Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.
Cumulative 100% Model	Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.
Affiliation Levels	
Individual/Business Level	Smallest unit at the individual level or business (if an individual owner cannot be identified).
Family Level	Includes any family associations that are not already accounted at the individual or business level.
Corporate Officer Level	Includes association through corporate officer's that are not accounted for in the other levels.
PCT	Percentage
sm, lg	Small, Large

Under Sub-Alternative 2.2, the single quota share ownership cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share plus the transfer/leasing of quota share allocation within the fishing year. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.2 in the surfclam or ocean quahog fisheries.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. This sub-alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without oversight. Therefore, while sub-

alternative 2.2 would establish a single cap quota share ownership of 49% that limits the exercise of market power through capping ownership levels for surfclams, it does not address the creation or exercise of market power through contractual control of quota.

Sub-alternative 2.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under Sub-Alternative 2.3, the single quota share ownership cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative was recommended for inclusion by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%; Table 18).

If the surfclam and ocean quahog cap levels described above (95% for surfclam and 95% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.3 in the surfclam or ocean quahog fisheries.

It is stated in the Compass Lexecon Report it is possible that under some circumstances an excessive shares cap level of 100% may be appropriate. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011). Alternative 2.3 could potentially result in quota accumulation levels that are near identical to those under alternative 1 (*status quo* alternative). If one firm or entity controls 95% of the quota, there would be no market for leasing under the current quota levels for these species, as nearly all the quota would be held by a single entity.

As previously indicated under the *status quo* alternative, while current levels of share consolidation do not appear to result in market power in the product market (monopoly/oligopoly), it could create market power in the input market (monopsony/oligopsony) for the fishery resource, or the quota share market. In fact, the CIE review of the Compass Lexecon Report indicated that more attention should be paid to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the

monopoly problem. The condition of TAC not binding and quota prices of zero[49] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry with a small number processors and vessels predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern that monopolization in the output market (Walden 2011).

Monopsony power could be exercised by processors over harvesters by reducing their demand for harvesting services, lowering the market price of harvesting services and increasing profits to the processing sector. However, if a processor owns a harvester, that firm would not benefit by underutilizing its own harvesting assets in order to depress the price of harvesting services. The processor will be motivated to use its own harvesting capacity when the incremental value of the harvest to the processor exceeds the incremental cost of harvesting, without regard for the effect of the additional harvesting on the market price of harvesting services. As a result, vertically integrated processors will increase harvest levels over those non-vertically integrated processors would choose were they to have influence over the market price of harvesting services (Mitchell et al. 2011). Lastly, from a social perspective, concentration of ownership and control could affect the social and community structure and participation in these fisheries.

Sub-alternative 2.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.3 could potentially allow for share concentration levels similar to those under the current conditions and as such, it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Sub-alternative 2.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions. Sub-alternative 2.3 could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.

Comparisons Across Sub-Alternatives 2.1 to 2.3

In this section a comparison between sub-alternatives 2.1 through 2.3 is made. This is different from the previous section where each of these sub-alternatives were compared to current conditions.

Sub-alternative 2.1 would have neutral socioeconomic impacts in the short-term compared to sub-alternatives 2.2 and 2.3 as no entity would be above the caps (if they had been implemented in 2017). However, in the long-term, alternative 2.1 would have slight positive socioeconomic impacts compared to sub-alternative 2.2, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. For example, sub-alternative 2.1 could potentially result in a minimum of four (surfclam) to five (ocean quahog) large and efficient companies (e.g., with more than 10% market share), while sub-alternative 2.2 could potentially result in only two large and efficient companies (Table

[49] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

18; if fully consolidated). An excessive-share cap of 28% for surfclams and 22% for ocean quahogs could potentially ensure that there would be at least four to five processors operating at reasonable output levels, respectively. Lastly, sub-alternative 2.1 would have positive socio-economic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation (as sub-alternative 2.3 could potentially result in one large entity controlling 95% of the quota for surfclam and/or ocean quahogs).

Sub-alternative 2.2 would have less positive socioeconomic impacts in the long-term compared to sub-alternatives 2.1, as sub-alternative 2.2 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.2 would have positive socioeconomic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.2 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 2.3 would have negative socioeconomic impacts in the long-term compared to sub-alternatives 2.1 and 2.2, as sub-alternative 2.3 has the potential to provide the smallest degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 2.1 would result in the most positive impacts, sub-alternative 2.2 would result in the second most positive impacts, and sub-alternative 2.3 would result in the least positive impacts.

Table 18. Potential impacts of sub-alternatives 2.1-2.3, Single Cap – Quota share ownership cap-only with unlimited possession of cage tags allowed during the fishing year for various models and affiliate levels.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 2.1 - Single Cap – Quota share ownership cap-only with unlimited possession of cage tags allowed during the fishing year; cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28%		28%		28%		28%		28%		28%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16
Ocean Quahog Values												
Cap value	22%		22%		22%		22%		22%		22%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12
Sub-Alternative 2.2 - Single Cap – Quota share ownership cap-only at 49% with unlimited possession of cage tags allowed during the fishing year; this cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share plus the transfer/leasing of quota share allocation within the fishing year												
Surfclam Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Sub-Alternative 2.3 - Single Cap – Quota share ownership cap-only at 95% with unlimited possession of cage tags allowed during the fishing year; cap at 95% based on industry representatives indicating that there is no market power (no monopolistic behavior)												
Surfclam Values												
Cap value	95%		95%		95%		95%		95%		95%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5
Ocean Quahog Values												
Cap value	95%		95%		95%		95%		95%		95%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5

Under alternative 3, a cap would be implemented – based on possession of both owned quota share and cage tags by an individual or entity. Because alternative 3 is based on possession of cage tags that are both owned and transferred, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This alternative imposes a limit on the possession of cage tags that are both owned and transferred, which would account for transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that occur in these fisheries.

Under sub-alternative 3.1, the cap would be based on the highest level of possession of both owned quota share and cage tags held by any individual or entity reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The caps under this alternative would depend on the model and affiliate levels selected by the Council. Specific maximum values for various models and level of analysis (i.e., affiliate levels) are presented in Tables 2 and 3.

Under sub-alternative 3.1, depending on the affiliate level and model selected, the cap for surfclam could be as low as 28% under the net actual percentage model (at the individual/business level) or as high as 49% under the cumulative 100% model (at the corporate officer level; Table 2). Based on these cap values, sub-alternative 3.1 could result in a minimum number of large entities (if fully consolidated) in the surfclam fishery ranging from four under the net actual percentage model to two under the cumulative 100% model (Table 19). Under this alternative, depending on the affiliate level and model selected, the cap for ocean quahogs could be as low as 29% under the net actual percentage model (at the individual/business level) or as high as 41% under the cumulative 100% model (at the corporate officer level; Table 3). For ocean quahogs, this sub-alternative could result in a minimum number of large entities (if fully consolidated) ranging from four under the net actual percentage model to three under the cumulative 100% model (Table 19).

If the surfclam and ocean quahog cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. Sub-alternative 3.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, some of the potential lower cap values under this sub-alternative (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values.

Since this sub-alternative would implement a cap on owned quota share and possession of cage tags, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 3.2, the cap (possession of both owned quota share and cage tags by an individual or entity) would be 40% for surfclams and 40% for ocean quahogs. This is based on the "Rule of Three" notion (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 19).

If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those caps under the net actual percentage model for both surfclams and ocean quahogs. However, under the cumulative 100% model, between one (1% of all entities) and three (4% of all entities) surfclam entities and between one (2% of all entities) and four (9% of all entities) ocean quahog entities would have been above these levels depending on the affiliation level (Table 19).

Sub-alternative 3.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. In general terms, sub-alternative 3.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, as indicated above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have been above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their values (combined possession of both owned quota share and cage tags) which could have been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags possessed that year. This could be accomplished by transferring fewer tags to their possession that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Since this sub-alternative would implement a cap on quota share ownership and possession of cage tags, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 3.3, the cap (possession of both owned quota share and cage tags) would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share of the total allowable landings. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 19).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.2 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 3.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a cap on quota share ownership and possession of cage tags, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Comparisons Across Sub-Alternatives 3.1 to 3.3

In this section a comparison between sub-alternatives 3.1 through 3.3 is made. This is different from the previous section where each of these sub-alternatives were compared to current conditions.

Sub-alternative 3.1 would have neutral socioeconomic impacts in the short-term compared to sub-alternatives 3.2 and 3.3, as in general terms, no entity would be above the caps (if they had been implemented in 2017; the exception to this generality is listed below). In the long-term, alternative 3.1 would have neutral socioeconomic impacts in the long-term compared to sub-alternative 3.2, because they both could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 19). The exception to this generalization would be sub-alternative 3.1 under the cumulative 100% model which would result in two large entities participating in the surfclam fishery, and as such, provides a lesser degree of protection against excessive consolidation and associated market power and social issues. As such, this results in long-term positive impacts that are smaller in magnitude. Lastly, in general terms, sub-alternative 3.1 would have positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.1 has the potential to provide a larger degree of protection against excessive consolidation. However, some of the potential lower cap values under sub-alternative 3.1 (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values. As such, under these sub-alternative 3.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 3.2 and 3.3.

In general terms, sub-alternative 3.2 would have slight positive socioeconomic impacts in the long-term compared to sub-alternatives 3.3, as sub-alternative 3.2 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. However, as noted above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have been above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their values (combined possession of both owned quota share and cage tags) which could have been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags possessed that year. This could be accomplished by transferring fewer tags to their possession that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Sub-alternative 3.3 would have slightly less positive socioeconomic impacts in the long-term compared to sub-alternatives 3.1 and 3.2, as sub-alternative 3.3 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 3.1 would result in the most positive impacts, sub-alternative 3.2 would result in the second most positive impacts, and sub-alternative 3.3 would result in the least positive impacts.

Table 19. Potential impacts of sub-alternatives 3.1-3.3, Cap based on possession of owned quota share and cage tags for various models and affiliate levels.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 3.1 - Cap on possession of owned quota share and cage tags based on highest level in the ownership and transfer data, 2016-2017												
Surfclam Values												
Cap value	28%		33%		44%		48%		49%		49%	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	28; 28; 28; 16	3 lg; 1 sm	33; 33; 33; 1	3 lg	44; 44; 12	2 lg; 1 sm	48; 48; 3	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	29%		29%		39%		41%		41%		41%	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	4 lg	29; 29; 29; 13	4 lg	29; 29; 29; 13	3 lg	39, 39, 22	3 lg	41; 41; 18	3 lg	41; 41; 18	3 lg	41; 41; 18
Sub-Alternative 3.2 - Cap on possession of owned quota share and cage tags; cap at 40% based on the "Rule of Three" notion												
Surfclam Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	53	0	54	0	54	0	69	1	68	2	67	3
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Ocean Quahog Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	43	0	43	0	43	0	46	1	44	3	43	4
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Sub-Alternative 3.3 - Cap on possession of owned quota share and cage tags; cap at 49%. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share of the total allowable landing												
Surfclam Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2

Under Alternative 4, a two-part cap approach would be implemented for each surfclams and ocean quahogs, with the first part being a cap on quota share ownership, and a second, cap on the possession of cage tags by an individual or entity. This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Mitchell et al. (2011) indicated that "the preference for short-term accumulations in the two-part cap limits the share of long-term quota controlled by any single party, which limits the ability to foreclose competitors by withholding quota on a committed multiseason basis." Because alternative 4 is based on a two-part cap approach that limits possession of both owned quota share and cage tags, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). Since this alternative limits the possession of both owned and transferred cage tags by an individual or entity, it accounts for transactions and complex contracting and business practices that occur in these fisheries.

Under sub-alternative 4.1, the two-part cap approach includes one cap on allocation ownership and a second cap on possession of both owned quota share and cage tags by an individual or entity based on the highest levels reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (i.e., affiliate levels) are presented in Tables 2 and 3.

Under sub-alternative 4.1, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 28% quota share ownership / 28% cage tags under the net actual percentage model (at the individual/business level) or as high as 28% quota share ownership / 49% cage tags under the cumulative 100% model (at the corporate officer level; Tables 2 and 20). Based on these cap values, sub-alternative 4.1 could result in a minimum of four large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 22% quota share ownership / 29% cage tags under the net actual percentage model (at the individual/business level) or as high as 22% quota share ownership / 41% cage tags under the cumulative 100% model (at the corporate officer level; Tables 3 and 20). For ocean quahogs, this sub-alternative could result in a minimum of five large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions.

However, sub-alternative 4.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. Furthermore, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% quota share ownership / 28% cage tags under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership and transfer data for each fishery (surfclams and ocean quahogs) during the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership and transfer data for 2016-2017 to allow for additional consolidation (Table 20). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. As with sub-alternative 4.1, the two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (i.e., affiliate levels) are presented in Table 20.

Under sub-alternative 4.2, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 43% / 43% under the net actual percentage model (at the individual/business level) or as high as 43% / 64% under the cumulative 100% model (at the corporate officer level; Table 20). Based on these cap values, sub-alternative 4.2 could result in a minimum of three large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 37% / 44% under the net actual percentage model (at the individual/business level) or as high as 37% / 56% under the cumulative 100% model (at the corporate officer level; Table 20). For ocean quahogs, this sub-alternative could result in a minimum of three large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.2 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.3, the quota share ownership cap would be 30% and a second, higher cap on cage tags would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. A 30% ownership cap and a 60% cap (based on possession of cage tags) could potentially result in a minimum of four large entities (if fully consolidated) participating in the fisheries (i.e., 30%, 30%, 30%, 10%; Table 20).

If the surfclam and ocean quahog two-part cap levels described above (i.e., 30/60%) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.3 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review;

Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.4, Two part-cap - quota share ownership cap and second, higher cap based on possession of cage tags; Surfclams: 35/65% and Ocean quahogs: 40/70%. If fully consolidated, this sub-alternative could potentially result in a minimum of three large entities participating in the surfclam fishery (i.e., 35%, 35%, 30%) and three large entities participating in the ocean quahog fishery (i.e., 40%, 40%, 20%; Table 20).

The cap values under sub-alternative 4.4 are a slight modification from the values presented under sub-alternative 4.3 and they represent an "industry compromise alternative" (according to most comments received during the public comment period) that would meet the Amendment objective of setting excessive shares cap levels for these fisheries while allowing for some expansion (further consolidation) given the current ownership levels in the fisheries (i.e., 28% ownership for surfclams; 22% ownership for ocean quahogs) if needed. While it was indicated that is a compromise alternative as it reflects cap levels that industry would accept; however, it was reiterated that the current management system (status quo/no action alternative 1) is working well and there is no need to implement excessive shares cap levels. The slightly higher quota share ownership cap for ocean quahogs (when compared to surfclams) is due to the fact that according to industry there are currently 2 plants processing ocean quahogs.

If the surfclam and ocean quahog two-part cap levels described above (i.e., 35/65% for surfclams and 40/70% for ocean quahogs) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.4 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.4 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.4 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities

from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Comparisons Across Sub-Alternatives 4.1 to 4.4

In this section a comparison between sub-alternatives 4.1 through 4.4 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

In general terms, sub-alternatives 4.1, 4.2, 4.3,and 4.4 are likely to have neutral socioeconomic impacts (e.g., similar magnitude and direction) in the short-term and long-term, because they all could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 20). In general terms, sub-alternatives 4.1, 4.3 and 4.4 would result in neutral socioeconomic impacts in the short-run and long-run but marginally positive compared to sub-alternative 4.2. As such, they all have the potential to provide a relatively similar degree of protection against excessive consolidation and associated market power and social issues. In addition, none of these sub-alternatives would result in any entity been above the caps (if they had been implemented in 2017). However, some of the potential lower two-part cap values under sub-alternative 4.1 (e.g., 28% quota share ownership / 28% cage tags under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower cap values. As such, under these sub-alternative 4.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternatives 4.2, 4.3, and 4.4.

Table 20. Potential impacts of sub-alternatives 4.1-4.4, Two-Part Cap Approach – A cap on quota share ownership and a second cap based on possession of cage tags for various models and affiliate levels.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 4.1 - Two-Part Cap Approach – A cap on quota share ownership and a second cap on possession of cage tags; cap based on highest level in the ownership and transfer data, 2016-2017												
Surfclam Values												
Cap value	28/28		28/33		28/44		28/48		28/49		28/49	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16
Ocean Quahog Values												
Cap value	22/29		22/29		22/39		22/41		22/41		22/41	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12
Sub-Alternative 4.2 - Two-Part Cap Approach – A cap on quota share ownership and a second cap on possession of cage tags; cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation												
Surfclam Values												
Cap value	43/43		43/48		43/59		43/63		43/64		43/64	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14
Ocean Quahog Values												
Cap value	37/44		37/44		37/54		37/56		37/56		37/56	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26

Table 20 (continued). Potential impacts of sub-alternatives 4.1-4.4, Two-Part Cap Approach – A cap on quota share ownership and a cap based on possession of cage tags for various models and affiliate levels.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 4.3 - Two-Part Cap Approach – A cap on quota share ownership and a second cap on possession of cage tags; quota share ownership cap at 30% and a second cap at 60%												
Surfclam Values												
Cap value	30/60		30/60		30/60		30/60		30/60		30/60	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10
Ocean Quahog Values												
Cap value	30/60		30/60		30/60		30/60		30/60		30/60	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10
Sub-Alternative 4.4 - Two-Part Cap Approach – A cap on quota share ownership and a second cap on possession of cage tags; Surfclams: 35/65% and Ocean quahogs: 40/70%.												
Surfclam Values												
Cap value	35/65		35/65		35/65		35/65		35/65		35/65	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	3 lg	35; 35; 30	3 lg	35; 35; 30	3 lg	35; 35; 30	3 lg	35; 35; 30	3 lg	35; 35; 30	3 lg	35; 35; 30
Ocean Quahog Values												
Cap value	40/70		40/70		40/70		40/70		40/70		40/70	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20

Under Alternatives 5, a cap on quota share ownership-only of 40% for surfclams and 40% for ocean quahogs with unlimited possession of cage tags allowed during the fishing year would be implemented. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

The 40% cap under this alternative is based on the "Rule of Three" notion (Mitchell et al. 2011, Walden 2011). In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011).

This alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). The FMAT noted that the "two-part system" (i.e., cap on ownership plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of a "two-part system" is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 21).

As described in section 6.0, the surfclam and ocean quahog fisheries are quite special and unique in the following three aspects. First, harvested surfclams and ocean quahogs must be processed before sale (e.g., clam strips, chopped or ground form for other products, such as high-quality soups and chowders). As such, processing requires more than simply heading and gutting. Second, there are a few byers of the processed products (e.g., Campbell Soup Company, Progresso, or large food service companies, such as Sysco). Third, for a number of years, the TAC has not been harvested. Furthermore, as indicated in section 6.0, net exit has occurred in the surfclam and ocean quahog processing sectors (for shellstock) for a variety of reasons.

The level the industry is willing and able to produce and sell in a given year, *ceteris paribus* (all else being equal) is the market equilibrium output (MEO). As indicated before, the current condition for both species is TAC [ACT] > MEO. A plausible explanation for the current state of excessive consolidation in the industry follows these three unique aspects in both fisheries. Given the share concentration levels in the processing sector, some processors could produce the MEO level of production with their own annual shares, and all other shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, in order to fulfill the market demand, all of the catch shares will have to be utilized and all ITQ shareholders would be able to utilize their shares and the monopsony power would disappear. Since the condition in these fisheries is that the TAC > MEO, some catch share owners cannot rent or sell their shares due to the monopsony power of the processors. The monopsony gains to the processors is the increase in net revenue due to the fact

that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs (SSC 2019).[50]

If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; Table 21). As such, no entity would have been constrained by the cap levels under alternative 5 in the surfclam or ocean quahog fisheries.

As indicated above, in addition to the cap on quota share ownership, this alternative would also establish Quota A and B shares (for each individual species). A hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work is presented in section 5.1.5. In general terms, this alternative would align Quota A shares (the initial quota level) with recent years landings (a proxy for market demand). Quota A shares (and associated number of cage tags) would be released at the onset of the fishing year and Quota B shares (and associated number of cage tags) would be released when Quota A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing and other complex contracting and business practices (involving cage tag transfers) to continue without imposing a limit on the possession of cage tags during the fishing year; a limit would only be placed on quota share ownership. Essentially, these complex practices would be allowed to proceed without oversight. However, if the supply of quota released under Quota A shares equals the market demand, there may be less incentive for a quota holder to enter into long-term contracts. One of the reasons long-term contracts exist is that if a quota holder doesn't enter into one, then there is a real possibility that they won't be able to lease their quota out at all in a given fishing year as the overall quota level for these fisheries have been at values that exceed market demand. It is possible that under this alternative, if there is less of an incentive to enter into long-term leases, their arrangements may change if the price of leases increase.

The Atlantic Surfclam and Ocean Quahog Information Collection Program Data (Ownership Data) was designed to gather information on leases (short-term and long-term) to assist in determining contractual control of quota. However, industry members have indicated that they would not release this information as some people consider it private. As such, given the incomplete information available, contractual control of quota cannot be accurately tracked.

Alternative 5 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, alternative 5 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the

[50] Report of the May 2019 SSC Meeting. Available at: http://www.mafmc.org/ssc.

ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase.

Furthermore, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. However, this is not expected to increase the cost of harvesting. The real cost of harvesting and processing should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners (SSC 2019; see footnote number 53 on page 150).

Surfclam and Ocean quahog processors have indicated in the past that they cannot influence the price of the products they sell, as the large companies that purchase from them (Campbell Soup Company, Progresso, etc.) will not consider price increases as they can buy other raw materials to produce their products. As such, it would be expected that profits for the processing sector would go down. In conclusion, while not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

However, it is possible that there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. If this alternative is selected by the Council additional analysis should be conducted to determine the appropriate trigger level.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. For example:

- It was indicated that establishing a Quota A and Quota B shares system would send a market signal indicating that the surfclam and ocean quahog quotas (TACs) have been reduced, because the amount of quota released under Quota A shares is lower than the

overall TACs that have been implemented in recent years. This in turn could result in big companies that purchase clam products (Progresso, Campbell Soup Company, etc.) to switch to lower quality foreign imports

- Quota A and Quota B shares system would disrupt banking/financial arrangement because ITQ shares have been used as collateral in securing long-term loans
- Aligning the quota with market demand may not necessarily result in equilibrium because long-term contacts arrangement (leasing arrangements) exist in these fisheries; and breaking existing long-term contracts could result in lawsuits
- Aligning the quota with market demand would give market power to the industry members that have not been able to lease/use their ITQ shares in recent years
- This alternative could result in closing of processing plants
- There is the potential for someone to lease large quantities of A shares and not use them to develop market power

Table 21. Potential impacts of alternative 5 (Quota share ownership cap-only at 40% with unlimited possession of cage tags allowed during the fishing year, plus a two-tier quota) for various models and affiliate levels.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Alternative 5 - Cap based on a 40% quota share ownership-only with unlimited possession of cage tags allowed during the fishing year												
Surfclam Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Ocean Quahog Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20

Under Alternatives 6, a cap on quota share ownership-only of 49% for surfclams and 49% for ocean quahogs with unlimited possession of cage tags allowed during the fishing year would be implemented. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership of quota share and the transfer/leasing of quota share allocation within the fishing year. The only difference between alternatives 5 and 6 are the cap levels on quota share ownership, all other aspects of the alternatives are identical.

Like alternative 5, this alternative would also align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%). The resulting number of participating entities under this alternative are similar to those under sub-alternative 2.2 (which would also implement a 49% quota share cap; Table 18).

As described in section 6.0, the surfclam and ocean quahog fisheries are quite special and unique in the following aspects. First, harvested surfclams and ocean quahogs must be processed before sale (e.g., clam strips, chopped or ground form for other products, such as high-quality soups and chowders). As such, processing requires more than simply heading and gutting. Second, there are a few byers of the processed products (e.g., Campbell Soup Company, Progresso, or large food service companies, such as Sysco). Lastly, for a number of years, the TAC has not been harvested.

The level the industry is willing and able to produce and sell in a given year, *ceteris paribus* (all else being equal) is the market equilibrium output (MEO). As indicated before, the current condition for both species is TAC [ACT] > MEO. A plausible explanation for the current state of excessive consolidation in the industry follows these three unique aspects in both fisheries. Given the share concentration levels in the processing sector, some processors could produce the MEO level of production with their own annual shares, and all other shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, in order to fulfill the market demand, all of the catch shares will have to be utilized and all ITQ shareholders would be able to utilize their shares and the monopsony power would disappear. Since the condition in these fisheries is that the TAC > MEO, some catch share owners cannot rent or sell their shares due to the monopsony power of the processors. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs (SSC 2019; see footnote number 53 on page 153).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (net actual percentage or cumulative 100% model) or affiliation level (individual/business, family, or corporate office; see results under sub-

alternative 2.2 in Table 18). As such, no entity would have been constrained by the cap levels under alternative 6 in the surfclam or ocean quahog fisheries.

As indicated above, in addition to the cap on quota share ownership, this alternative would also establish Quota A and B shares (for each individual species). A hypothetical example how the two quota-tier system (Quota A shares and Quota B shares) would work is presented in section 5.1.5. In general terms, this alternative would align Quota A shares (the initial quota level) with recent years landings (a proxy for market demand). Quota A shares (and associated number of cage tags) would be released at the onset of the fishing year and Quota B shares (and associated number of cage tags) would be released when Quota A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing and other complex contracting and business practices (involving cage tag transfers) to continue without imposing a limit on the possession of cage tags during the fishing year; a limit would only be placed on quota share ownership. Essentially, these complex practices would be allowed to proceed without oversight. However, if the supply of quota released under Quota A shares equals the market demand, there may be less incentive for a quota holder to enter into long-term contracts. One of the reasons long-term contracts exist is that if a quota holder doesn't enter into one, then there is a real possibility that they won't be able to lease their quota out at all in a given fishing year as the overall quota level for these fisheries have been at values that exceed market demand. It is possible that under this alternative, if there is less of an incentive to enter into long-term leases, their arrangements may change if the price of leases increase.

The Atlantic Surfclam and Ocean Quahog Information Collection Program Data (Ownership Data) was designed to gather information on leases (short-term and long-term) to assist in determining contractual control of quota. However, industry members have indicated that they would not release this information as some people consider it private. As such, it is not likely that contractual control of quota can be accurately tracked. As such, given the incomplete information available, contractual control of quota cannot be accurately tracked.

Alternative 6 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, alternative 6 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase.

Furthermore, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. However, this is not expected to increase the cost of harvesting. The real cost of harvesting and processing should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners (SSC 2019; see footnote number 53 on page 153).

Surfclam and Ocean quahog processors have indicated in the past that they cannot influence the price of the products they sell, as the large companies that purchase from them (Campbell Soup Company, Progresso, etc.) will not consider price increases as they can buy other raw materials to produce their products. As such, it would be expected that profits for the processing sector would go down. In conclusion, while not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

However, it is possible that there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. If this alternative is selected by the Council additional analysis should be conducted to determine the appropriate trigger level.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed under alternative 5 and also apply here.

Comparisons Across All Excessive Shares Cap Alternatives

In general terms, alternatives 5 and 6 would result in the largest positive impacts as a result of protection against market power or other anticompetitive behaviors and associated social issues, alternatives 3 and 4 would result in the second highest positive impacts, alternative 2 would result in the third highest positive impacts, and alternative 1 would result in the least positive impacts. More detail of the expected impacts is provided below. The comparison of impacts presented in

this section are across the human communities VEC. As previously indicated, there are no impacts on any other VECs from any of the alternatives given that they are purely administrative in nature.

Alternative 1 (No Action/Status Quo)

As previously indicated, under alternative 1 (no action) no limit or definition of excessive shares accumulation is included in the FMP. This alterative is expected to result in impacts ranging from no impacts in the short-term to negative impacts in the long-term when compared to alternatives 2 through alternative 6, because alternative 1 provides no protection against excessive consolidation and associated market power and social issues. The exception would be when alternative 1 is compared to sub-alternative 2.3, as sub-alternative 2.3 could potentially allow for share concentration levels similar to those under alternative 1, and it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Compared to sub-alternative 2.3, alternative 1 is likely to have a similar magnitude of socioeconomic impacts (i.e., neutral).[51]

None of the excessive share alternatives discussed in this document are expected to impact the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions.

Alternative 2

Alternative 2 would implement a single cap based on quota share ownership-only with unlimited possession of cage tags allowed during the fishing year. Because alternative 2 is based on ownership-only values, it does not account for leasing or other transactions and complex contracting and business practices (e.g., ownership and control through leasing/transfers of cage tags) that are prevalent in the fisheries when setting the cap limit. This alternative would limit the exercise of market power through capping ownership levels for surfclams and ocean quahogs, but it does not address the creation or exercise of market power through contractual control of quota.

Alternative 2 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 3 and alternative 4, alternative 2 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternatives 3 and 4).

Lastly, alternative 2 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through

[51] Since sub-alternative 2.3 is likely to result in impacts similar to those under alternative 1, all other comparisons involving alternative 2 exclude sub-alternative 2.3, with the understanding that when comparisons are made with sub-alternative 2.3 exclusively, impacts would be similar to those under alternative 1 (no action/*status quo*).

capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 3

Alternative 3 would implement a cap based on quota share ownership plus possession of cage tags. Because alternative 3 is based on combined possession of both owned and transferred cage tags, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting and business practices that occur in these fisheries.

Alternative 3 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 3 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 3). Compared to alternative 4, alternative 3 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 3 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 4

Alternative 4 would implement a two-part cap approach, with the first part being a cap on quota share ownership, and a second, higher cap on the possession of cage tags by an individual or entity. Because alternative 4 is based on a two-part cap approach that limits the combined possession of both owned and transferred tags by an individual or entity, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on the possession of both owned and transferred tags, which would account for transactions and complex contracting and business practices that occur in these fisheries.

Alternative 4 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 4 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts

in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 4). Compared to alternative 3, alternative 4 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 4 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 5

Alternative 5 would implement a cap on quota share ownership-only with unlimited possession of cage tags allowed during the fishing year. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Alternative 5 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because alternative 5 not only addresses the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also aligns supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. For these same reasons, alternative 4 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) compared to alternatives 2, 3, and 5, but likely smaller in magnitude. Lastly, compared to alternative 6, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. While not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

However, as indicated above, during the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed above under alternative 5.

Alternative 6

The expected impacts under alternative 6 are similar to those described under alternative 5 above.

7.4.2 Excessive Shares Review Alternatives

Under alternative 1 (no action/s*tatus quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. Therefore, the no action alternative is expected to have no impact on the quantity of surfclam or ocean quahog landings, including revenues. However, as previously indicated, conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure established at an appropriate level now could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry). Thus, not having a mechanism in place to review the effectiveness of implemented excessive shares measures could result in socioeconomic impacts that range from no impacts (if implemented excessive shares measures or cap level is appropriate through time) to slight negative (if implemented excessive shares measures or cap level is not appropriate through time). Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. As with the no action alternative above, alternative 2 is not expected to have impacts on the quantity of surfclam or ocean quahog landings, including revenues. However, this alternative allows periodic review of excessive shares measures that the Council adopts. As previously indicated conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. This alternative would implement a periodic review of regulations to protect against market power or other anticompetitive behaviors in these fisheries in a timely manner. Alternative 2 is expected to result in socioeconomic impacts ranging from no impacts to slight positive. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts. While it is not possible to anticipate the potential management costs associated with alternative 2, they are likely to be higher than those associated with alternative 1. Costs will depend on the complexity and scope of the review process.

7.4.3 Framework Adjustment Process Alternatives

Under alternative 1 (no action/s*tatus quo*), the list of management measures that have been identified in the FMP that could be addressed via framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap level to be modified via the framework adjustment process.

The Council would still have the prerogative to review any adopted excessive shares measures and make modifications to any implemented excessive cap level through an amendment if it becomes

inefficiently high or low through time as fisheries conditions change. However, making modifications to existing regulations using an amendment process requires more work and time compared to a framework process. Not having the flexibility to make minor modifications to the excessive shares cap level (no action alternative) could result in socioeconomic impacts ranging from no impact to slightly negative. Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). The proposed alternative would provide flexibility to address potential modifications to any implemented excessive cap level if it becomes inefficiently high or low through time as fisheries conditions change. Alternative 2 is expected to result in socioeconomic impacts that range from no impact to slight positive. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts because this alternative provides the flexibility to adjust potential modifications to any implemented excessive cap level if it becomes inefficiently or low through time as fisheries conditions change, and this has the potential to reduce needed staff time and management cost.

7.4.4 Multi-Year Management Measures Alternatives

Under alternative 1 (no action/s*tatus quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no socioeconomic impacts. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no socioeconomic impacts. Alternative 2 would have socioeconomic impacts that are the same as those under alternative 1.

Although there are no socioeconomic impacts associated with alternative 2, it is expected that it would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between

stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

7.5 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ; 40 CFR §1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective. Rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required under NEPA as part of an EA if the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed surfclams and ocean quahog fisheries.

7.5.1 Consideration of the VECs

The following sections discuss the significance of the cumulative effects on the following VECs:

- Managed resource (Atlantic surfclam and ocean quahog) and non-target species
- Physical environment
- Protected species
- Human communities

7.5.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of Atlantic surfclam and ocean quahog. The Western Atlantic Ocean is the core geographic scope for each of the VECs. The core geographic scopes for the managed species are the management units (section 6.1). For non-target species, those ranges may be expanded and would depend on the range of each species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by surfclam and ocean quahog and non-target species in the Western Atlantic Ocean. The core geographic scope for protected species is their range in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities in coastal states from Maine through Virginia directly involved in the harvest or processing of the managed species (section 6.4).

7.5.3 Temporal Boundaries

The temporal scope of past and present actions for VECs is primarily focused on actions that have occurred after FMP implementation (1977 for surfclam and ocean quahog). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.3) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about three years (2022) into the future. This period was chosen because the dynamic nature of resource management and

lack of information on projects that may occur in the future make it very difficult to predict impacts beyond this timeframe with any certainty.

7.5.4 Actions Other Than Those Proposed in this Document

The impacts of the alternatives considered in this document are described in sections 7.1 through 7.4. Table 22 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions other than those considered in this document. The impacts of these actions are described qualitatively as the actual impacts are too complex to be quantified in a meaningful way. When any of these abbreviations (P, Pr, or RFF), occur together it indicates that some past actions are still relevant to the present and/or future actions.

Fishery Management Actions

Surfclam and Ocean Quahog FMP Actions

Past, present, and reasonably foreseeable future actions for surfclam and ocean quahogs management include the establishment of the original FMPs, all subsequent amendments and frameworks, and the setting of annual specifications (annual catch limits and measures to constrain catch and harvest). These fisheries are managed under an ITQ system, and recently, the NMFS implemented a data collection protocol process to collect information about quota share ownership that would enhance the management of these fisheries. The historical management practices of the Council have resulted in overall positive impacts on the health of the surfclam and ocean quahog stocks (section 7.5.5.1). The Council has taken many actions to manage the associated commercial fisheries. The MSA is the statutory basis for federal fisheries management. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Other FMP Actions

In addition to the Atlantic Surfclam and Ocean Quahog FMP, there are many other FMPs and associated fishery management actions for other species that have impacted these VECs over the temporal scale described in section 7.3.3. These include FMPs managed by the Mid-Atlantic Fishery Management Council, New England Fishery Management Council, Atlantic States Marine Fisheries Commission, and to a lesser extent the South Atlantic Fishery Management Council. Omnibus amendments are also frequently developed to amend multiple FMPs at once. Actions associated with other FMPs and omnibus amendments have included measures to regulate fishing effort for other species, measures to protect habitat and forage species, and fishery monitoring and reporting requirements.

As with the surfclam and ocean quahog actions described above, other FMP actions developed by Fishery Management Councils or GARFO have been developed in compliance with the MSA and

have had positive long-term cumulative impacts on managed and non-target species, habitat, and protected resources because they constrain fishing effort and manage stocks at sustainable levels. However, constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Non-Fishing Impacts

Other Human Activities

Non-fishing activities that introduce chemical pollutants, sewage, or suspended sediment into the marine environment or result in changes in water temperature, salinity, or dissolved oxygen, pose a risk to all VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging, and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and as such may indirectly constrain the sustainability of managed species, non-target species, and protected species. Decreased habitat suitability tends to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that reduce fishing effort could negatively impact human communities. The overall impact on the affected species and their habitats on a population level is unknown, but likely to range from no impact to low negative, depending on the population, since a large portion of these populations have a limited or minor exposure to these local non-fishing perturbations.

Non-fishing activities permitted under other Federal agencies (e.g., beach nourishment, offshore wind facilities, etc.) require examinations of potential impacts on the VECs. The MSA imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH (50 CFR §600.930). The eight regional fishery management councils engage in this review process by making comments and recommendations on federal or state actions that may affect habitat for their managed species and by commenting on actions likely to substantially affect habitat.

In addition to the activities above, in recent years, offshore wind energy and oil and gas exploration have become more relevant activities in the Greater Atlantic region that are expected to impact all VECs, as described below. For potential biological impacts of wind, the turbines and cables may influence water currents and electromagnetic fields, respectively, which can affect patterns of movement for various species (target, non-target, protected). Habitats directly at the turbine and cable sites would be affected, and there could be scouring concerns around turbines. Impacts on human communities in a general sense will be mixed – there will be economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generated using fossil fuels with renewable sources. But there may be negative effects on fishing activities in terms of effort displacement, or making fishing more difficult or expensive near the turbines or cables.

For oil and gas, this timeframe would include leasing and possible surveys. Seismic surveys impact the acoustic environment within which marine species live, and have uncertain effects on fish behaviors that could cumulatively lead to negative population level impacts. The science on this is fairly uncertain. If marine resources are affected by seismic, then so in turn the fishermen targeting these resources would be affected. However, there would be an economic component in the form of increased jobs where there may be some positive effects on human communities.

While there are currently no operational wind farms in Mid-Atlantic waters, potential offshore wind energy sites have been identified off of Virginia, Maryland, New Jersey, Delaware, and New York, and there are several proposals to develop wind farms in both nearshore and offshore waters. In New England, offshore wind project construction south of Massachusetts/Rhode Island may begin as early as 2019 (three projects including Vineyard Wind, Bay State Wind, and South Fork Wind Farm). Additional areas have been leased and will have site assessment activities in the next few years. These projects could have low negative impacts on EFH, as well as surfclam and ocean quahog, non-target species, and fishing communities if there are any negative impacts on those resources. Furthermore, there could be negative impacts on protected species of birds and marine mammals if they interact with the wind farms.

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats on a population level is unknown, but likely to range from no impact to moderate negative, depending on the number and locations of projects that occur, as well as the effects of mitigation efforts.

Global Climate Change

Global climate change affects all components of marine ecosystems, including human communities. Physical changes that are occurring and will continue to occur to these systems include sea-level rise, changes in sediment deposition; changes in ocean circulation; increased frequency, intensity and duration of extreme climate events; changing ocean chemistry, and warming ocean temperatures. Emerging evidence demonstrates that these physical changes are resulting in direct and indirect ecological responses within marine ecosystems which may alter the fundamental production characteristics of marine systems (Stenseth et al. 2002). Climate change will potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors.

Results from the Northeast Fisheries Climate Vulnerability Assessment indicate that climate change could have impacts on Council-managed species that range from negative to positive, depending on the adaptability of each species to the changing environment (Hare et al. 2016).[52] Based on this assessment, surfclam was determined to have a high overall vulnerability to climate change. The exposure of surfclam to the effects of climate change was determined to be "high" due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All surfclam life stages use marine habitats. Surfclam spawning occurs in summer and early fall in warm water, starting earlier inshore than offshore. Surfclam eggs hatch into a trochophore larvae within 1-2 days of fertilization. Larvae cannot survive high

[52] Climate vulnerability profiles for individual species are available at: https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index

temperatures. Juveniles and adults occur in coastal waters up to 66 m. The distributional vulnerability of surfclam was ranked as "high," as surfclam mortality is higher at higher temperatures. Surfclam was determined to have a “high” biological sensitivity to climate change as they form calcium carbonate shell and adults are sessile.

This assessment determined ocean quahog had a very high overall vulnerability to climate change. Similar to surfclam, the exposure of ocean quahog to the effects of climate change was determined to be “high” due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All ocean quahog life stages use marine habitats. Ocean quahog is a cold-water, long-lived bivalve. Ocean quahog broadcast spawn over a protracted season and planktonic eggs mature into free-swimming trochophore, the pediveliger stage, swims, but also has a foot for burrowing. Temperatures affect growth rate. Juveniles occur in offshore sandy substrates and adults occur in dense beds over level bottom just below the surface sediments in medium to fine grain sand. Ocean quahogs usually occur at depts between 25-61 m and temperature regulates the cross-shelf distribution. Also similar to surfclam, the distributional vulnerability was ranked as “high” as growth slows at higher temperatures. Ocean quahog was determined to have a “very high” biological sensitivity to climate due to population growth rate, sensitivity to ocean acidification, adult mobility, slow growth, from calcium carbonate shell, and adults are sessile (Hare et al. 2016).

Overall, climate change is expected to have impacts that range from positive to negative depending on the species. For surfclams and ocean quahogs climate change impacts are high. However, future mitigation and adaptation strategies to climate change may mitigate some of these impacts. The science of predicting, evaluating, monitoring and categorizing these changes continues to evolve.

Table 22. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr **Original Surfclam and Ocean Quahog FMP and subsequent FMP Amendments and Frameworks**	Established management measures	**Indirect Positive** Regulatory tool available to rebuild and manage stocks	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Benefited domestic businesses
P, Pr **Surfclam and Ocean Quahog Specifications**	Establish quotas, other fishery regulations	**Indirect Positive** Regulatory tool to specify catch limits, and other regulation; allows response to annual stock updates	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Benefited domestic businesses
P, Pr, RFF **Developed, Applied, and Redo of Standardized Bycatch Reporting Methodology**	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	**No Impact** May improve data quality for monitoring total removals of managed resource	**No Impact** May improve data quality for monitoring removals of non-target species	**No Impact** Will not affect distribution of effort	**No Impact** May increase observer coverage and will not affect distribution of effort	**Potentially Indirect Negative** May impose an inconvenience on vessel operations
P, Pr, RFF **Other FMPs and Omnibus Actions**	Regulating fishing effort in other FMPs, habitat and forage species protection, industry monitoring and reporting	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Indirect Positive** Reduced fishing effort, implemented gear requirements	**Indirect Positive** Regulated fishing effort, implemented gear requirements	**Mixed** Benefited some domestic businesses; negative impacts on some participants due to limited access and constraints on landings and revenues
P, Pr, RFF **PSP Closed Areas**	Reopening of PSP Closed Areas to Clam fishing	**No Impact to Indirect Negative** Fishery impacts in previously unfished areas	**Indirect Positive** Reduced overall fishing effort	**Indirect Positive** Reduced overall fishing effort	**No Impact** Limited interactions with gear occur	**Indirect Positive** Benefitted domestic businesses

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Agricultural runoff**	Nutrients applied to agricultural land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource
P, Pr, RFF **Climate change**	Wide-ranging impacts including changes in ocean chemistry, temperatures, sea-level, and ocean circulation; increased frequency, intensity, and duration of extreme climate events.	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Decreased habitat quality, suitability and/or availability for some species; increased quality/suitability/availability for others	**Negative to positive** Depending on impacts to habitat and prey availability	**Negative to positive** Depending on resiliency of individual communities and mitigation/adaptation
P, Pr, RFF **Port maintenance**	Dredging of coastal, port and harbor areas for port maintenance	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
P, Pr, RFF **Offshore disposal of dredged materials**	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability
P, Pr, RFF **Beach nourishment**	Offshore mining of sand for beaches	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for mining companies, possibly negative for fishing industry
	Placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Positive** Beachgoers like sand; positive for tourism

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Marine transportation**	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for some interests, potential displacement for others
P, Pr, RFF **Renewable and Non-renewable Offshore and Nearshore Energy Development**	Transportation of oil, gas, and electric through pipelines and cables; Construction of oil platforms, wind facilities, liquefied natural gas facilities; Additional port development infrastructure	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Reduced habitat quality; offshore platforms may benefit structure oriented fish species habitat	**Potentially Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
Pr, RFF **Implementation of Data Collection Protocol**	Collect data needed to track ITQ share ownership within the fishery	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**Uncertain – Likely Mixed** Collects data needed to evaluate excessive shares cap, but additional paperwork may be required
RFF **Amendment to address Excessive Shares (within 3 years)**	Establish a cap for excessive share accumulation	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**Indirect Positive** Protects against excessive share accumulation in fishery

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
RFF **Omnibus EFH Amendment 2 (NEFMC) and Clam Access Frameworks**	Revises essential fish habitat and habitat area of particular concern designations, revises or creates habitat management areas, including gear restrictions	**Indirect Positive** Improve habitat quality	**Indirect Positive** Improve habitat quality	**Indirect Positive** Improve habitat quality	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues
RFF **Convening of Take Reduction Teams (periodically)**	Recommend measures to reduce mortality and injury to marine mammals	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

7.5.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section describes the expected effects of these actions on each VEC.

7.5.5.1 Magnitude and Significance of Cumulative Effects on Managed Species and Non-Target Species

Those past, present, and reasonably foreseeable future actions which may impact target species (surfclam and ocean quahog) and non-target species, and the direction of those potential impacts, are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore and marine areas where the projects occur; therefore, the magnitude of those impacts on the managed resources is expected to be limited due to limited exposure to the populations at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on productivity of the managed resources is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and the annual specifications process have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions described in Table 22 will have additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect the ecosystem services on the productivity of managed species depends. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the managed resources have had positive cumulative effects.

Catch limits, commercial quotas and recreational harvest limits for each of the managed species have been specified to ensure that these rebuilt stocks are managed sustainably and that measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from specification of management measures are largely dependent on how effective those measures are in meeting the objectives of preventing overfishing and achieving optimum yield, and on the extent to which mitigating measures are effective. The proposed actions described in this document would positively reinforce the past and anticipated positive cumulative effects on the managed resources by achieving the objectives specified in the respective FMP and ensuring the requirements of the MSA are met. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (Table 22).

7.5.5.2 Magnitude and Significance of Cumulative Effects on Physical Environment

Those past, present, and reasonably foreseeable future actions which may impact the physical environment and habitat (including EFH), and the direction of those potential impacts, are summarized in Table 22. The direct and indirect negative actions described in Table 22 are localized in nearshore and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to limited exposure of habitat at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on habitat is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by species under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and annual specifications process have had positive cumulative effects on habitat. The actions have constrained fishing effort both at a large scale and locally and have implemented gear requirements which may reduce impacts on habitat. As required under these FMP actions, EFH and Habitat Areas of Particular Concern were designated for the managed resources. It is anticipated that the future management actions described in Table 22 will result in additional direct or indirect positive effects on habitat through actions which protect EFH and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All the VECs are interrelated; therefore, the linkages among habitat quality, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and will likely continue to be, taken to improve the condition of habitat. Some actions, such as coastal population growth and climate change may indirectly impact habitat and ecosystem productivity; however, these actions are beyond the scope of NMFS and Council management. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had neutral to positive cumulative effects.

The proposed actions described in this document are largely administrative in nature and would not significantly change the past and anticipated cumulative effects on habitat and thus would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (Table 22).

7.5.5.3 Magnitude and Significance of Cumulative Effects on Protected Species

Those past, present, and reasonably foreseeable future actions which may impact protected species, and the direction of those impacts, are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore and marine project areas where they occur. Therefore, the magnitude of those impacts on protected species is expected to be limited due to limited exposure of the populations at large. Agricultural runoff may be much broader in scope

and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on protected species is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact protected species prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected species under NMFS' jurisdiction.

Given their life history dynamics, large changes in protected species abundance over long time periods, and the multiple and wide-ranging fisheries management actions that have occurred, the cumulative impacts on protected species were evaluated over a long-time frame (i.e., from the 1970's through the present). While some protected species are doing better than others, overall the trend of stock condition for protected resources has improved over the long-term due to reductions in the number of interactions. Past fishery management actions taken through the respective FMPs and annual specifications process have contributed to this long-term trend toward positive cumulative effect on protected species through the reduction of fishing effort (and thus reduction in potential interactions) and implementation of gear requirements. It is anticipated that future management actions, described in Table 22, will result in additional indirect positive effects on protected species. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected species have had a positive cumulative effect.

The proposed actions described in this document are largely administrative in nature and would not change the past and anticipated cumulative effects on protected species and thus would not have any significant effect on protected species individually or in conjunction with other anthropogenic activities (Table 22). Overall, actions have had, or will have, positive impacts on protected species.

7.5.5.4 Magnitude and Significance of Cumulative Effects on Human Communities

Those past, present, and reasonably foreseeable future actions which may impact human communities and the direction of those potential impacts are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. Those actions may displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal ecosystem may larger in magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the respective FMPs and annual specifications process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices while also sometimes reducing the availability

of the resource to fishery participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions described in Table 22 will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur if management actions result in reduced revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had overall positive cumulative effects.

Catch limits and commercial quotas for each of the managed species have been specified to ensure that these rebuilt stocks are managed in a sustainable manner and that management measures are consistent with the objectives of the FMPs under the guidance of the MSA. The impacts from annual specification of management measures on the managed species are largely dependent on how effective those measures are in meeting their intended objectives and the extent to which mitigating measures are effective.

Despite the potential for negative short-term effects on human communities, positive long-term effects are expected due to the long-term sustainability of the managed stocks. Overall, the proposed actions described in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (Table 22).

7.5.6 Preferred Action on all the VECs

[This section will be completed prior to submission to the NMFS]

8.0 APPLICABLE LAWS

8.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

8.1.1 National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The most recent FMP amendments describe how the management actions implemented comply with the National Standards. The Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield (OY) for Atlantic surfclam and ocean quahogs and the U.S. fishing industry.

To achieve OY, both scientific and management uncertainty need to be addressed when establishing catch limits that are less than the Overfishing Limit (OFL); therefore, the Council develops recommendations that do not exceed the ABC recommendations of the SSC which have been developed to explicitly address scientific uncertainty. In addition, the Council has considered relevant sources of management uncertainty and other social, economic, and ecological factors, which resulted in recommendations for annual catch targets for both managed resources. The Council uses the best scientific information available (National Standard 2) and manages both species throughout their range (National Standard 3). These management measures do not discriminate among residents of different states (National Standard 4), they do not have economic allocation as their sole purpose (National Standard 5), the measures account for variations in these fisheries (National Standard 6), they avoid unnecessary duplication (National Standard 7), they take into account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). Finally, actions taken are consistent with National Standard 9, which addresses bycatch in fisheries. The Council has implemented many regulations that have indirectly acted to reduce fishing gear impacts on EFH. By continuing to meet the National Standards requirements of the MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will ensure that cumulative impacts of these actions will remain positive overall for the ports and communities that depend on these fisheries, the Nation as a whole, and certainly for the resources.

8.2 NEPA FINDING OF NO SIGNIFICANT IMPACT (FONSI)

[This section will be completed prior to submission to the NMFS]

The CEQ Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR §1508.27). In addition, the Companion Manual for NOAA Administrative Order 216-6A provides sixteen criteria (the same ten as the CEQ Regulations and six additional) for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

16. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting EA, it is hereby determined that the proposed actions in this document will not significantly impact the quality of the human environment as described above and in the EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

_____ _____

Regional Administrator for GARFO, NMFS, NOAA *Date*

8.3 Endangered Species Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on ESA-listed and MMPA protected resources. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on these fisheries.

8.4 Marine Mammal Protection Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on marine mammals protected under the MMPA. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect marine mammals or critical habitat in any manner not considered in previous consultations on the fisheries. A final determination of consistency with MMPA will be made by the agency during the rulemaking process.

8.5 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council has developed this amendment document and will submit it to NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through Virginia).

8.6 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of an FMP and subsequent amendments and framework adjustments. Development of this amendment document provided many opportunities for public review, input, and access to the rulemaking process. This action and the proposed measures were developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to comment during the public scoping period (from June 23, 2017 to July 21, 2017). The public also had the opportunity to review and comment on management measures/goals and objectives during the Council meeting in October 2017, June 2018, April 2017, and June 2019. FMAT meetings and advisory panel meetings were also open to the public. Public hearings will be held and provide addition opportunity for comment from the public, prior to the Council's decision to submit the document to NMFS. In addition, the public will have further opportunity to comment on this amendment document when NMFS publishes a request for comments notice in the Federal Register.

8.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes measures for setting measures to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. This action would also revise the process for specifying multi-year management measures, require periodic review of the excessive shares measures, and allow adjustments to the made under the frameworkable provisions of the FMP. In addition, this amendment considers revisions to some or all of the current management objectives for the Atlantic Surfclam and Ocean Quahog FMP. This document includes: A description of the alternatives considered, the preferred action and rationale for selection, and any changes to the implementing regulations of the FMP (if applicable). As such, this document enables the implementing agency (NMFS) to make a decision on implementation and this document serves as a supporting document for the proposed rule.

The action contained within this amendment document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during a number of public meetings (see section 8.6). In addition, the public will have further opportunity to comment on this amendment document once NMFS publishes a request for comments notice in the Federal Register.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g., Confidentiality of Statistics of the MSA; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR §229.11, Confidentiality of information collected under the Marine Mammal Protection Act).

Objectivity of Information Product

The category of information product that applies here is "Natural Resource Plans." Section 8.0 describes how this document was developed to be consistent with any applicable laws, including MSA with any of the applicable National Standards. The analyses used to develop the alternatives (i.e., policy choices) are based upon the best scientific information available. The most up to date information was used to develop the EA which evaluates the impacts of those alternatives (see section 7.0). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the surfclam and ocean quahog fisheries.

The review process for this amendment document involves MAFMC, NEFSC, GARFO, and NMFS headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and non-economic social sciences. The MAFMC review process involves public meetings at which affected stakeholders have the opportunity to comments on proposed management measures. Review by GARFO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, and compliance with the applicable laws. Final approval of the amendment document and clearance of the rule is conducted by staff at NMFS Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.8 Paperwork Reduction Act

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

8.9 Impacts of the Plan Relative to Federalism/EO 13132

This document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

8.10 Regulatory Impact Review / Initial Regulatory Flexibility Analysis

[This section will be completed prior to submission to the NMFS].

During the public hearings for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, we are seeking industry and public input in categorizing current allocation holders by matching allocation holders using the industries described in the North American Industry Classification System Codes (NAICS) for the purpose of conduction the Regulatory Flexibility Analysis (RFA).

The NAICS codes are used to categorize businesses by industry description (e.g., commercial harvester, processor, bank, for-hire vessel). As an example, the SBA defines a small business in the commercial fishing industry as a firm with total annual receipts (gross revenues) not in excess of $11.0 million. A small business in the recreational for-hire fishery is a firm with receipts of up to $7.5 million.

The FMAT used the Small Business Administration table of Small Business Size Standards matched to the NAICS Codes to categorize current surfclam and ocean quahog allocations holders (See Tables X and Y below) and seeks industry and public input on the categorizations made or any missing information. This data will be used when finalizing the analysis in this section once the Council selects the prefer alternative.

The NMFS requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new FMP or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses many items in the regulatory philosophy and principles of EO 12866.

The Regulatory Flexibility Act (RFA) requires the Federal rulemaker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. In reviewing the potential impacts of proposed regulations, the agency must either certify that the rule "will not, if promulgated, have a significant economic impact on a substantial number of small entities." As indicated in section 5.0, the proposed actions in this document would implement measures to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges, as well as measures that require the periodic review of implemented excessive shares measures, that allow modifications to the excessive shares cap level via framework actions, and measures to revise to the process for specifying multi-year management measures. An Initial Regulatory Flexibility Analysis (IRFA) will be prepared to further evaluate the economic impacts of the various alternatives presented once the Council has identified preferred alternatives. This analysis supports a more thorough analysis (RFA Analysis) which will be completed.

Table X. SBA classification for 2017 ocean quahog allocation owners of record.

SBA Code	Size Standard in Millions	SBA Classification	Alloc. #	Owner of Record	Street	City	State
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q667	Bumble Bee Foods LLC c/o Gabriel Montesano	280 10th Ave	San Diego	CA
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q649	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	Q664	TD Bank NA Attn: David Nilsen, Sr. Vice President	1101 Hooper Ave	Toms River	NJ
522110	$550 million in assets	Commercial Banking	Q691	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
522130	$550 million in assets	Credit Unions	Q690	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ
?	?	?	Q684	ITQ LLC	PO Box 727	Manahawkin	NJ
?	?	?	Q199	Legend Inc	607 Seashore Rd	Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q112	Wando River Corporation c/o Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
114113	$11 million in revenues	Commercial fishing	Q194	John Kelleher C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
114113	$11 million in revenues	Commercial fishing	Q021	Atlantic Vessels of Delaware Inc	PO Box 178	Norfolk	VA

114113	$11 million in revenues	Commercial fishing	Q055	Kristy Lee Clam Co	PO Box 114	Newcomb	NY
114113	$11 million in revenues	Commercial fishing	Q629	LET Ventures Incorporated (Ellen W LLC)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q006	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
114113	$11 million in revenues	Commercial fishing	Q576	Foxy Investments Inc C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	Q609	M J Holding Co LLC	PO Box 114	Newcomb	NY
114113	$11 million in revenues	Commercial fishing	Q596	Atlantic Vessels Inc	PO Box 178	Norfolk	VA
114113	$11 million in revenues	Commercial fishing	Q115	LET Ventures Incorporated (Patti B Clam Ventures Inc)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q181	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
?	?	?	Q672	OSM Resources LLC	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q598	John W Kelleher Trust C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
?	?	?	Q676	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL

114113	$11 million in revenues	Commercial fishing	Q005	LET Ventures Incorporated (A & B Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q049	LET Ventures Incorporated (Sarah C Conway Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q128	LET Ventures Incorporated (F/V Ocean View Inc)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q109	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD
114113	$11 million in revenues	Commercial fishing	Q101	T & M Clammers Inc	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q193	Peter A LaMonica C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
?	?	?	Q107	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q174	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q084	LET Ventures Incorporated (B&B Shellfishing Inc)	PO Box 727	Manahawkin	NJ
?	?	?	Q685	NSR Resources LLC	PO Box 727	Manahawkin	NJ
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	Q016	George S Carmines In Trust	103 Rens Rd	Poquoson	VA
?	?	?	Q003	Adriatic Inc	10127 Keyser Point Road	Ocean City	MD

?	?	?	Q669	Kenneth W Bailey	PO Box 12	Heislerville	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q658	DC Air & Seafood Inc	PO Box 581	Winter Harbor	ME
?	?	?	Q056	Seafish Inc	10134 Waterview Dr	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	Q143	Shellfish Inc	PO Box 86	West Sayville	NY

Table Y. SBA classification for 2017 surfclam allocation owners of record.

SBA Code	Size Standard in Millions	SBA Classification	Alloc. #	Owner of Record	Street	City	State
?	?	?	C624	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
424460	100 employees	Fish and Seafood Merchant Wholesalers	C583	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	C632	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
522130	$550 million in assets	Credit Unions	C529	Farm Credit East, ACA Attn: Benjamin Thompson	240 South Rd	Enfield	CT
NA	Public Administration: Small business size standards are not established for this Sector. Establishments in the Public Administration Sector are Federal, state, and local government agencies which administer	Sector 92	C669	US DOC NOAA/NMFS Financial Services Division	55 Great Republic Dr	Gloucester	MA
NA		Sector 92	C666	US DOC NOAA/NMFS Financial Services Division ITF Michael and Danny NOAA ITQs	55 Great Republic Dr	Gloucester	MA

	and oversee government programs and activities that are not performed by private establishments.			Attn: James Plouffe			
?	?	?	C136	Stephanie Dee Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	C660	First Niagara Bank NA ITF DPL Niagara Enterprises LLC Attn: Terri Kratz	401 Plymouth Rd Ste 600	Plymouth Meeting	PA
114113?	$11 million in revenues?	Commercial fishing?	C009	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C188	Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
522110	$550 million in assets	Commercial Banking	C634	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
114113	$11 million in revenues	Commercial fishing	C074	Kristy Lee Clam Co	PO Box 114	Newcomb	NY
522130	$550 million in assets	Credit Unions	C546	Farm Credit East, ACA FBO JM & MT Attn: Benjamin Thompson	240 South Rd	Enfield	CT
114113	$11 million in revenues	Commercial fishing	C589	Yannis Karavia LLC C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
522130	$550 million in assets	Credit Unions	C627	Farm Credit East, ACA Attn: Scott Kenney	240 South Rd	Enfield	CT
424460	100 employees	Fish and Seafood Merchant Wholesalers	C540	George Torggler	921 Preserve Dr	Annapolis	MD
522130	$550 million in assets	Credit Unions	C662	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ

424460	100 employees	Fish and Seafood Merchant Wholesalers	C663	DPL ITQs LLC	PO Box 309	Millville	NJ
114113	$11 million in revenues	Commercial fishing	C528	LNA Inc	PO Box 178	Portsmouth	RI
114113?	$11 million in revenues?	Commercial fishing?	C146	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	C026	George S Carmines In Trust	103 Rens Rd	Poquoson	VA
522130	$550 million in assets	Credit Unions	C547	Farm Credit East, ACA FBO LET Attn: Benjamin Thompson	240 South Rd	Enfield	CT
?	?	?	C004	Adriatic Inc	10127 Keyser Point Road	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C642	CCCFA Inc Attn: Seth Rolbein	1566 Main St	Chatham	MA
114113	$11 million in revenues	Commercial fishing	C563	LET Ventures Incorporated (Ellen W LLC)	PO Box 727	Manahawkin	NJ
NA	Public Administration: Small business size standards are not established for this Sector. Establishments in the Public Administration Sector are Federal, state, and local government agencies which administer and oversee government programs and activities that are not performed by private establishments.	Sector 92	C674	US DOC NOAA/NMFS Financial Services Division ITF LaVecchia and LaVecchia LLC Attn: James Plouffe	55 Great Republic Dr	Gloucester	MA
114113	$11 million in revenues	Commercial fishing	C110	LET Ventures Incorporated (F/V Ocean Bird Inc)	PO Box 727	Manahawkin	NJ

?	?	?	C133	City of Southport Inc	854 Tern Ln Apt 103	Salisbury	MD
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	C552	M J Holding Co LLC	PO Box 114	Newcomb	NY
?	?	?	C664	Faye Y Watson	10222 Golf Course Rd	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C065	LET Ventures Incorporated (Sarah C Conway Inc)	PO Box 727	Manahawkin	NJ
?	?	?	C166	Nantucket Shoals Inc Attn: Albert C Rosinha Jr	147 Pine St	Rochester	MA
522110	$550 million in assets	Commercial Banking	C559	Sturdy Savings Bank (P & E) Attn: Commercial Loans	PO Box 900	Cape May Court House	NJ
522110	$550 million in assets	Commercial Banking	C655	Audubon Savings Bank ITF Cape Cod of Maryland Inc Attn: Letitia C. Baum, Senior Vice President	515 S White Horse Pike	Audubon	NJ
114113	$11 million in revenues	Commercial fishing	C007	LET Ventures Incorporated (A & B Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C046	LET Ventures Incorporated (B & D Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C215	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ
?	?	?	C189	Anthony W Watson	10232 Golf Course Rd	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C151	LET Ventures Incorporated	PO Box 727	Manahawkin	NJ

				(Patti B Clam Ventures Inc)			
?	?	?	C080	TMT Allocations Inc (Leprechaun Inc)	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C454	LET Ventures Incorporated (Leroy E Truex)	PO Box 727	Manahawkin	NJ
?	?	?	C584	Mabel Susan III Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C099	Mabel Kim Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C033	Big Diamond Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C201	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD
114113	$11 million in revenues	Commercial fishing	C561	Roy Osmundsen	14 Whippoorwill Ln	Cape May Court House	NJ
114113	$11 million in revenues	Commercial fishing	C134	LET Ventures Incorporated (Starlight Comm Fish Inc)	PO Box 727	Manahawkin	NJ
?	?	?	C8270	Jacek Kubiak	8 Cove Dr	North Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C149	Wando River Corporation c/o Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
424460	100 employees	Fish and Seafood Merchant Wholesalers	C568	Daniel M Cohen	985 Ocean Dr	Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C515	Dolores Truex	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C127	Gary Osmundsen	12 Rabbit Run	Cape May	NJ
114113	$11 million in revenues	Commercial fishing	C135	T & M Clammers Inc	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C079	Lauren Kim Inc	12 Rabbit Run	Cape May	NJ

522130	$550 million in assets	Credit Unions	C656	Farm Credit East, ACA Attn: David A Bishop	2 Constitution Dr	Bedford	NH
?	?	?	C560	Mary Patricia Price	540 Hidden Pines Blvd	New Smyrna Beach	FL
?	?	?	C613	NSR Resources LLC	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C638	Vongole Ragazzi LLC	48 Gorton Rd	Millville	NJ
?	?	?	C229	Kenneth W and Sharon L Bailey	PO Box 12	Heislerville	NJ
114112	$11 million in revenues	Commercial fishing	C008	LET Ventures Incorporated (F/V Amanda Tara Inc)	PO Box 727	Manahawkin	NJ
522130	$550 million in assets	Credit Unions	C661	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ
114113	$11 million in revenues	Commercial fishing	C071	Wyoming Boat Corporation	12 Rabbit Run	Cape May	NJ
?	?	?	C075	Seafish Inc	10134 Waterview Dr	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C063	T & P Vessel Inc	210 Hagen Rd	Cape May Court House	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C629	New Sea Rover Inc ITF Blount Seafood Corporation	114 Willow Dr	Cape May	NJ
114112	$11 million in revenues	Commercial fishing	C637	F/V Maude Platt Inc	515 Sanford Rd	Westport	MA
114113	$11 million in revenues	Commercial fishing	C011	D & L Commercial Fish Inc	PO Box 727	Manahawkin	NJ

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10.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this document, the Council consulted with NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. To ensure compliance with NMFS formatting requirements, the advice of NMFS GARFO personnel was sought.

Copies of this document are available from Dr. Christopher M. Moore, Executive Director,
Mid-Atlantic Fishery Management Council,
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Dover, DE 19901

Appendix A

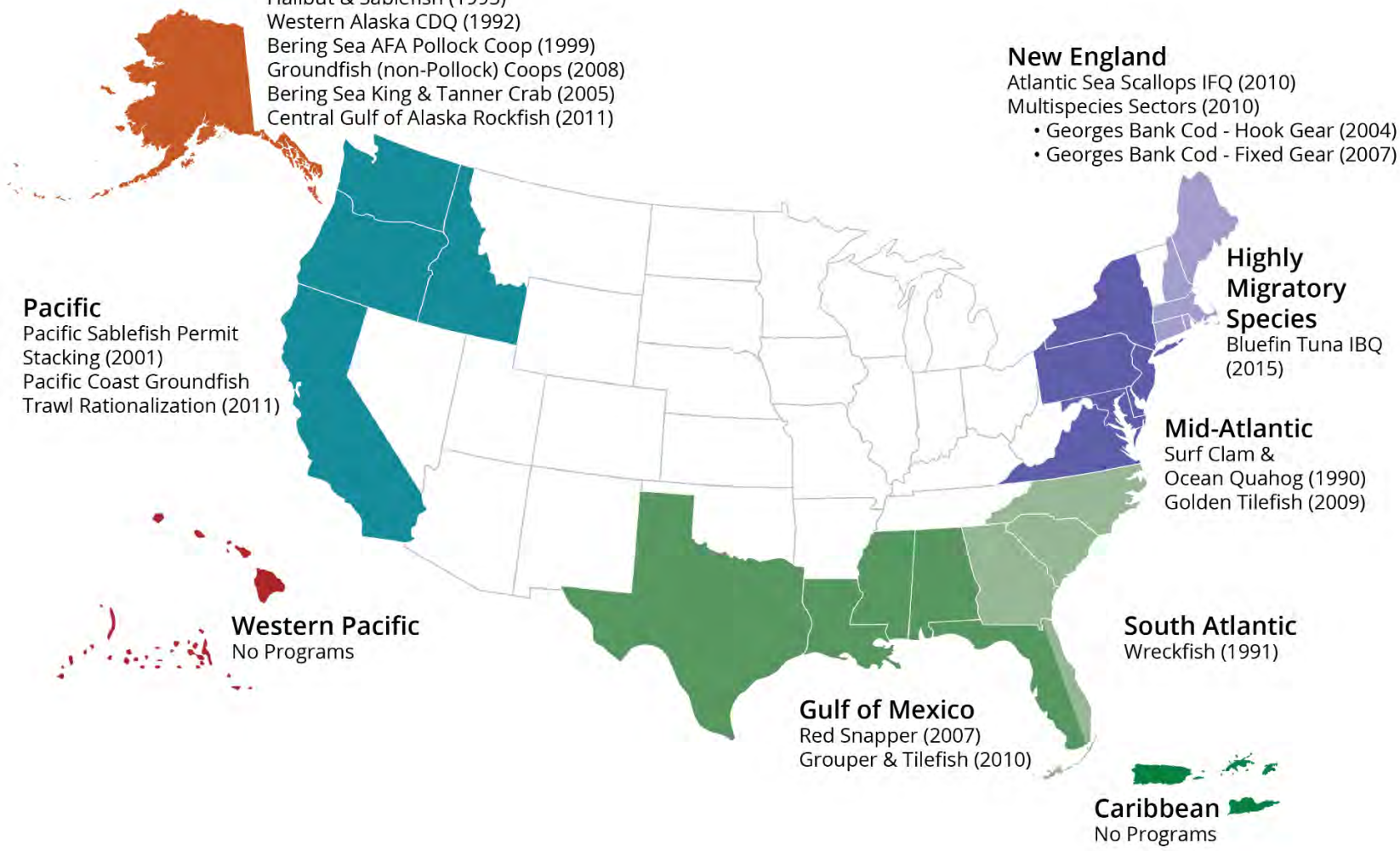
Catch Shares programs in the USA

"Catch shares" is a general term associated with several fisheries management strategies that dedicate a secure share of fish to individual fishermen, cooperatives, or fishing communities for their exclusive use. This appendix presents information on the geographic distribution of the 16 Catch Shares Programs throughout the country. In addition, this appendix provides a brief summary of how these programs are managed.[53]

The information presented below was provided by Lindsay Fullenkamp (NOAA) and Wendy Morrison (NOAA).

[53] For additional information please visit: https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares.

Current Catch Shares Programs



Program	Excessive Share Cap
Atlantic Sea Scallops IFQ	Yes. 2.5% of annual quota pounds[54]; 5% cap on quota share[55]
Multispecies Sectors	Yes. No individual or entity can hold more than 5% of all limited access groundfish permits. Additionally, there is a limit on the aggregated average of all allocated groundfish stocks of 15.5 Potential Sector Contribution (PSC). (Each permit has a history that brings a percentage of quota to the sector the permit enrolls with.) An entity can hold PSC for a single stock in excess of 15.5%, so long as the total holdings do not exceed 232.5 PSC for all 15 species. In other words, because there are 15 groundfish stocks currently allocated to the fishery, the total PSC across all stocks used by a permit holder cannot exceed 232.5 PSC (an average PSC of 15.5% per stock multiplied by 15 groundfish stocks).
Bluefin Tuna IBQ	No. The IBQ program is designed to account for bycatch in directed pelagic longline fisheries. There are various measures in place to curtail the excessive accumulation of share or allocation, such as no permanent sales and all leases contained within the calendar year.
Surf Clam & Ocean Quahog	No
Golden Tilefish	Yes, 49% of the tilefish IFQ total allowable landings
Wreckfish	Yes, 49% of quota share
Red Snapper	Yes, 6% of quota share
Grouper & Tilefish	Yes, quota share caps are: deep water grouper 14.7%, gag 2.3%, other shallow water grouper 7.3%, red grouper 4.3%, and tilefish 12.2%
Pacific Sablefish Permit Stacking	Yes, no individual can hold more than three permits unless meet requirements of grandfather clause.
Pacific Coast Groundfish Trawl Rationalization	Yes For IFQ, quota share limits and quota pound vessel limits (annual and daily). Limits vary by species. The 30+ categories can be found here: http://www.westcoast.fisheries.noaa.gov/publications/fishery_management/trawl_program/accumulation-limits.pdf. For the mothership cooperative program, mothership permit usage limit (no more than 45% of sector allocation). Mothership catcher vessel endorsed permit ownership limit (no more than 20% of the sector allocation).

[54] Quota pounds is the annual amount of fish a participant is allowed to catch, usually defined in terms of total weight. It is often calculated as a percentage of the commercial quota based on a participant's quota shares. It varies according to changes in the commercial quota over time.

[55] Quota share is the percentage of the sector's catch limit to which the holder of quota shares has access to harvest. This percentage is used to calculate the annual allocation, and it is not affected by changes in the catch limit over time.

Halibut & Sablefish	Yes. No one can hold or control more than 0.5%-1.5% of the halibut or sablefish quota shares in various combinations of areas (Gulf of Alaska, Bering Sea, and Aleutians) unless grandfathered in based on original landings history. There are similar restrictions on the amounts of IFQ that can be used on any single vessel.
Western Alaska CDQ	No. The Bering Sea King and Tanner Crab and Halibut Sablefish IFQ have limits on CDQ holdings, but there are no specific excessive share limits in the CDQ Program itself because the allocations were specified by Congress. However, the percentage allocated is reviewed every 10 years.
Bering Sea AFA Pollock Coop	Yes. No entity can harvest more than 17.5% or process more than 30% of the pollock directed fishery allocation.
Groundfish (non-Pollock Coops)	Yes. No single person can hold or use more than 30% of the quota share, unless grandfathered; no single vessel may catch more than 20% of the initial TAC assigned to the non-AFA trawl catcher/processor sector in any given year.
Bering Sea King & Tanner Crab	Yes. No individual or entity may hold/use more than 1-20% of shares (varies by fishery) unless grandfathered. Processors may not possess or use more than 30% of the processor shares for each fishery unless grandfathered, with some limited exceptions for specific fisheries and entities.
Central Gulf of Alaska Rockfish	Yes. There are four types of use caps to limit the amount of rockfish quota share and cooperative fishing quota, unless grandfathered. The caps can be found in Table 1 here: https://alaskafisheries.noaa.gov/sites/default/files/rockfish-faq.pdf

Appendix B

Synthesis Document for

Review of Goals and Objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan

October 2017

Prepared by the Fisheries Leadership & Sustainability Forum

Contents

1 Context for revising goals and objectives

1.1 Project overview

The Council is reviewing and potentially revising goals and objectives for the Surfclam and Ocean Quahog (SCOQ) Fishery Management Plan (FMP) in support of the Council's 2014-2018 Strategic Plan and 2017 Implementation Plan, which identified reviewing and updating FMP goals and objectives as a priority. This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they provide meaningful guidance and are consistent with today's fisheries and management context. The Council will follow a similar process to update goals and objectives for all FMPs.

The Council contracted with the Fisheries Leadership & Sustainability Forum (Fisheries Forum) to support this work by developing a process to support the Council's discussion. Between April and July 2017, Fisheries Forum staff conducted planning conversations with members of the Council's SCOQ Committee, SCOQ Advisory Panel (AP), and additional state agency representatives from states engaged in the fisheries. The Fisheries Forum also reviewed comments provided by the public during scoping hearings held in July 2017.

The Fisheries Forum synthesized this feedback to identify the major ideas and themes of discussion. The Council's Surfclam and Ocean Quahog Fishery Management Action Team (FMAT) reviewed this information and provided recommendations to help guide the Council's discussion. This document combines the Fisheries Forum's synthesis of feedback and the FMAT's recommendations. This information is intended to help frame and focus the Council's review of goals and objectives, and is not intended to be comprehensive of all ideas and perspectives.

The Council will discuss SCOQ FMP goals and objectives at the October 2017 Council meeting (October 10-12, 2017 in Riverhead, New York). At this time, the Council may adopt revisions to SCOQ FMP goals and objectives for inclusion in a public hearing document. The Council and public will have additional opportunities to provide input on this issue.

1.2 Original FMP objectives

The current FMP objectives were adopted in 1988 through Amendment 8 to the SCOQ FMP.

1. Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

1.3 Terms: Goals, objectives, and strategies

As part of the Council's discussion and review of goals and objectives, it will be important to consider the appropriate terminology.

- Goals are broad, big picture, and aspirational. They can help communicate high-level values and priorities for SCOQ management.
- Objectives are more specific and actionable. They can help describe important steps toward accomplishing goals.
- Strategies refer to specific processes, decision points, and actions the Council may take to achieve objectives and support goals.

Goals and objectives are appropriate for the Council's discussion; however, specific management strategies would be appropriate to discuss in the context of other Council actions and will not be part of this discussion. Appendix 2 includes additional examples to help demonstrate the difference between goals, objectives, and strategies.

The four current SCOQ FMP objectives are described in Amendment 8 as objectives and not goals. Other Council FMPs include a combination of goals and objectives. Appendix 3 includes goals and objectives from all Mid-Atlantic FMPs. The Council could choose to consider structuring guidance for the SCOQ FMP in terms of goals, objectives, or both. The FMAT's recommendation includes a set of five goal statements with optional objectives for the Council's consideration.

1.4 MAFMC Strategic Plan

The Council's review of SCOQ FMP goals and objectives supports the Council's Strategic Plan and the 2017 Implementation Plan. The Council's 2014-2018 Strategic Plan identifies reviewing and updating FMP goals and objectives as a priority:

Management Goal: Develop fishery management strategies that provide for productive, sustainable fisheries.

Objective 11: Evaluate the Council's fishery management plans

Strategy 11.2: Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable.

The Council's 2017 Implementation Plan has a list of proposed deliverables including "Review and revise FMP goals and objectives" for the SCOQ FMP.

1.5 Scoping questions

The following questions were included in the Council's July 2017 Scoping Guide for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment to elicit feedback on SCOQ FMP goals and objectives. (The Excessive Shares Amendment will consider excessive shares and FMP goals and objectives as two separate issues.)

- Are the existing objectives appropriate for managing the surfclam and ocean quahog fisheries?

- Are there any objectives that appear outdated or do not reflect the way these fisheries are managed today? If so, how could they be updated?
- Is the intent of each objective clear? If not, how could they be reworded or clarified?
- Should any new goals and/or objectives be added?
- What else should the Council consider during the process of reviewing the objectives for the SCOQ FMP?

2 Feedback on goals and objectives

This section provides an overview of ideas and feedback to help inform the Council's review of SCOQ FMP goals and objectives. Contributors include members of the Council's SCOQ Committee and AP, additional state representatives from states engaged in the fisheries, and stakeholders who provided comments during the Council's July 2017 scoping hearings. Contributors commented briefly on the use of goals and objectives. Additional feedback focused on three themes: 1) relevance of the current objectives, 2) opportunities for revisions, and 3) other issues that may be pertinent to goals and objectives, including Council priorities and unique aspects of the surfclam and ocean quahog fisheries.

2.1 Use of goals and objectives

Managers and advisors who contributed to this project shared the following ideas related to the use of FMP goals and objectives. Most managers and advisors do not refer back to goals and objectives on a regular basis, if at all, but felt they have an important role in the FMP.

Purpose: Goals and objectives provide high level guidance or the "ground rules" for a fishery to ensure it is managed sustainably. Managers and advisors described goals and objectives as foundational to the FMP (e.g., the "blueprint", the "benchmark", the National Standards of the FMP) and the Council's message to the public and industry about how it intends to manage the SCOQ fisheries. Goals and objectives need to be long term and flexible to accommodate changing conditions.

Time horizon: Goals are meant to be long term; objectives are shorter term and a measure of the effectiveness of the set goals. Managers and advisors felt that goals and objectives need to be set for the long term to provide stability and allow the industry to make business decisions. Goals and objectives should also provide managers and the industry with short-term flexibility to address challenges and changing conditions. The appropriate time horizon for goals and objectives can also depend on the circumstances of a fishery and what is needed.

Audience: The intended audience for goals and objectives is a large group that includes the Council, NOAA Fisheries, industry, interested stakeholders, state agencies, non-governmental organizations, and consumers.

2.2 Relevance of the current objectives

Many contributors felt that the current FMP objectives continue to remain relevant and provide meaningful guidance despite significant changes in the surfclam and ocean quahog fisheries. Contributors shared the following reasons why they felt that the current objectives are relevant and appropriate in their current form.

Flexibility: Contributors felt that the objectives have remained relevant through significant biological changes to the SCOQ resources and regulatory changes to the fisheries. They described seeing changes including a shift in the center of biomass to the north, a decrease in fishing activity in the southern end of the range, encountering surfclams among ocean quahogs in deeper water, fleet consolidation after implementation of the Individual Transferable Quota (ITQ) system, and improvements to the science and research supporting management of the SCOQ resources. Contributors felt that the current objectives are sufficiently flexible to accommodate future changes.

Process and intent: Some contributors described their high regard for the wording and intent of the current set of objectives and the process that was originally followed to develop them, as well as their respect for the people who participated.

Performance: Contributors feel that management is working well, that the current objectives are being achieved, and that these objectives define one of the most successfully managed fisheries in the U.S. The objectives reflect the current social and economic circumstances of the fisheries and have minimized government and industry costs. In particular contributors noted that the stock is rebuilt, harvest rates are stable, management uncertainty is low, short-term economic dislocations have been minimized, and regulatory requirements are simplified. Some contributors also noted that safety has been improved.

Stability and consistency: Contributors feel that the current objectives and adoption of the ITQ program have allowed the industry to make efficient planning and business decisions.

Relationships and process: Contributors feel that the current objectives support an efficient and cooperative relationship between the Council, NOAA Fisheries, and industry.

Overall, contributors felt the fisheries are managed well and these original FMP objectives are still relevant. Some felt no changes or updates are necessary to the current objectives, while others felt a refresh and/or some minor wording updates could be helpful to modernize them.

2.3 Opportunities for revisions

Although contributors generally felt that the current SCOQ FMP objectives are still relevant, many suggested opportunities for revisions to ensure that objectives provide meaningful guidance, are clearly worded, and are consistent with the way the fisheries and the Council currently operate. These opportunities include minor wording adjustments as well as more comprehensive structural and content-related revisions.

2.3.1 Minor revisions

The following section describes opportunities identified by contributors for the Council to adjust, update, or clarify specific terms within each objective while preserving its intent. Contributors felt that objectives should be clearly worded to ensure that their intent is clear to managers, stakeholders, and enforcement.

Objective 1
Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.

- Update the objective: The Council could update this objective to reflect the need to maintain rather than “rebuild” the surfclam and ocean quahog resources, which are not overfished or undergoing overfishing. Many contributors felt “rebuild” is an outdated term and that refreshing this objective would acknowledge the progress made and that the SCOQ resources are sustainably managed.
- Clarify specific terms: Some felt it could be helpful to clarify some of the terms in this objective including “stabilizing” and “economic dislocations”. For example, harvest rates are stable and

the quota has been the same for years, so "stabilizing" may be a term that is more reflective of the fisheries in previous years.
- Other considerations: Some felt this objective could take the longevity of the species into consideration.

Objective 2

Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.

- Wording: This objective could acknowledge other relevant aspects of managing the fisheries, such as monitoring.
- Update the objective: Many felt management of the SCOQ fisheries is straightforward and simple, and that this objective might reflect a time when management was more complicated. The Council could update this objective, for example, to focus on maintaining current regulatory requirements.

Objective 3

Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.

- Update the objective: The current objective refers to "bringing harvest capacity into balance", however, contributors felt that harvesting capacity is in alignment with processing and biological capacity in the sustainable SCOQ fisheries. This portion of the objective could be updated to reflect the current fisheries and status of the resources.
- Clarify specific terms: Some weren't clear on the meaning of "economic efficiency" in this objective.

Objective 4

Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

- Clarify specific terms: Some contributors weren't sure what is meant by "unanticipated short term events" because there are not a lot of sudden changes in these fisheries and they are not aware of disruptions or destabilizing events that could occur in today's fisheries. However, some thought that changing environmental conditions could be considered an unanticipated event that could be reflected in this objective.

2.3.2 Structural and content revisions

In addition to the minor revisions above, some contributors felt that there are opportunities for the Council to make more significant structural and/or content-related revisions, ranging from minor to comprehensive changes to the existing objectives. (There may not be a clear delineation between "minor" and "significant" revisions, given that multiple minor revisions to one objective could result in substantial changes).

Order: The objectives could be ordered in terms of importance or priority.

Structure: Objectives could be combined or reorganized. For example, contributors noted that current objectives 3 and 4 both address industry operations.

Comprehensive revisions: The objectives could be completely revised. One example of a complete new set of goals and objectives was provided during the Council's July scoping hearings and is included as appendix to this document (Appendix 4: Example of revised goals and objectives provided by Bumble Bee Seafoods).

2.4 Other issues

The Council could consider how goals and objectives intersect with other Council priorities and unique aspects of the SCOQ resources and fisheries. Contributors identified several topics that are relevant to the SCOQ fisheries and could be relevant to a review of goals and objectives.

Ecosystem and habitat considerations: Implementation of the Council's Ecosystem Approach to Fisheries Management (EAFM) and effective use of the Essential Fish Habitat (EFH) authorities are Council priorities.

Climate and ecosystem changes: Some contributors are concerned about the impacts of ocean acidification to the long-lived, sessile surfclam and ocean quahog resources and feel that the fisheries need to remain adaptable to changing environmental conditions.

Scientific advances: Supporting advances in fishery-independent data collection and modeling that reflect the unique biology of surfclams and ocean quahogs helps to enhance the effective management of the SCOQ resources.

Changes to the fisheries: Contributors commented about the fisheries (both the biomass and fishing activity) shifting north into the geographical bounds of the New England Fishery Management Council and issues with accessible areas in New England due to the Omnibus Habitat Amendment.

Contributors noted other attributes of the fisheries that could be reflected in revised goals and objectives, including surfclams and ocean quahogs being a safe, high quality product. The longevity of the species is another unique attribute. Some also noted the importance of continuing to improve understanding of the resources, fisheries, and dependent communities, and the shared role of managers, industry, and science in the sustainable management of the SCOQ fisheries.

3 FMAT recommendation development

3.1 Context for FMAT recommendations

3.1.1 Outcomes from FMAT discussion

The Surfclam and Ocean Quahog FMAT convened via webinar on September 20, 2017, to consider the feedback obtained from planning conversations and scoping hearings, and to provide recommendations to help guide the Council's review of FMP goals and objectives. The FMAT recognizes that the Council will consider a range of possible options including:

- Making no changes to the current objectives
- Making minor changes or wording adjustments to the current objectives
- Making significant changes to the current objectives
- Developing a new set of revised objectives

The FMAT's discussion resulted in two outcomes to help support the Council's consideration of these options. The FMAT recommends that the Council discuss these two outcomes and determine how to proceed.

> Outcome 1: Discussion questions
> The FMAT developed a set of discussion questions (Section 3.2.1) to help guide the Council's discussion of SCOQ FMP goals and objectives and consideration of the options above.
>
> Outcome 2: Revised goals and objectives
> The FMAT recommended a set of goal statements and objectives (Section 3.2.2) for the Council's consideration of revised goals and/or objectives.

3.1.2 Rationale for FMAT recommendations

The FMAT developed Outcomes 1 and 2 after considering the guidance provided by the Council's 2014-2018 Strategic Plan (Section 1.4), the discussion questions used to elicit feedback from the public during the July 2017 scoping hearings (Section 1.5), and the feedback obtained from planning conversations and public comment (Section 2). The FMAT concluded that while the current SCOQ FMP objectives were carefully considered at the time they were developed, they should be revised to provide more useful guidance to the Council for the following reasons.

Acknowledge achievement and success. The current SCOQ FMP objectives reflect the intended and desired outcomes of Amendment 8. Aspects of these objectives have already been achieved. Revising FMP goals and objectives would acknowledge the improvements that have been made to the management of the SCOQ fisheries, recognize what is working well, and focus on maintaining and sustaining these improvements.

Clarify intent. Goals and objectives are an important public statement about what an FMP is trying to accomplish, and should be clear to stakeholders of all backgrounds. The current objectives and specific terms may not be clear to those who were not involved in the management process at the time

Amendment 8 was developed. Terms may also be confusing because they are not defined or have multiple definitions (e.g., economic efficiency). In addition, the current objectives are complicated and combine topics (e.g., Objective 1 addresses biology and economics). Revising goals and objectives would simplify and focus this guidance to clarify the Council's intent while still acknowledging the need to balance different objectives.

Provide flexible long-term guidance. The current SCOQ FMP objectives are short-term and focus on implementation of the ITQ program. Revising goals and objectives is an opportunity for the Council to develop broad, high-level guidance that describes the Council's longer-term intent for the fisheries, and is flexible to remain relevant over time and through changes to the fisheries.

Clearly identify FMP-level guidance. In addition to setting FMP goals and objectives, the Council may identify goals and/or objectives for specific amendments. For example, the Council identified objectives for Amendment 10 to the SCOQ FMP in 1998 (see Question 6 below). Furthermore, fisheries and FMPs evolve over time, and this can lead to a disconnect between the stated goals and/or objectives for an FMP and the way a fishery currently operates. Through the process of reviewing and revising FMP goals and objectives, the Council should clearly identify FMP-level guidance that is intended to carry forward through future Council actions, and ensure that this guidance reflects the current state of a fishery.

3.2 FMAT recommendations

3.2.1 Outcome 1: Discussion questions

The FMAT identified several discussion questions that may help inform the Council's consideration of goals and objectives for the SCOQ FMP.

Question 1: How does the Council want to structure guidance for the SCOQ FMP?
The Council could choose to structure guidance for the SCOQ FMP in the form of goals, objectives, or both. The FMAT feels that goals would provide valuable long-term guidance, but notes that this is an important structural consideration for the Council to discuss. The FMAT's recommendations include both goals and objectives but the FMAT could provide these in a different format.

Question 2: What does the Council view as the time frame for goals and objectives?
Time frame is an important consideration related to Question 1. Goals and objectives for biological sustainability may be essentially permanent, but other guidance may need to be adjusted over time. The FMAT suggests the Council consider the time frame for long-term guidance, how frequently the Council is likely to revisit FMP goals and objectives, and whether reviews are likely to occur as needed or on a set schedule. The FMAT considered how frequently the Council might revisit goals and objectives (for example, every 10 years, with every other iteration of the Council's Strategic Plan, or in conjunction with ITQ reviews) though did not endorse or recommend a time frame for review.

Question 3: What is the Council's intent for reviewing and potentially revising goals and objectives?
The FMAT suggests the Council consider whether goals and objectives are meant to maintain the current state of the fisheries or look ahead to the future. The FMAT's recommendations for revised goals and objectives (Section 3.2.2) reflect the current fisheries; the development of

forward-looking goals and/or objectives that imply change to the fisheries would be the purview of the Council.

Question 4: How could the Council's review of FMP goals and objectives acknowledge what is working well in the SCOQ fisheries?

Feedback from planning conversations and public comments emphasized that the current objectives are still viewed as relevant and that the fisheries are performing well, though opinions differed on whether the current objectives should be revised. The FMAT felt that revising goals and objectives would refocus FMP guidance and acknowledge improvements to the fisheries that should be maintained. The Council should consider how FMP goals and objectives can most effectively acknowledge what is working well in the SCOQ fisheries.

Question 5: How does the Council want to address measuring the performance of FMP goals and objectives?

The Council's 2014-2018 Strategic Plan states: *Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable*. The FMAT suggests that the Council discuss this issue. In the future, the Council could request that FMATs give further consideration to measuring the performance of goals and objectives. Some FMAT members indicated that the goals recommended in Section 3.2.2 could be measured using quantitative and/or qualitative metrics.

Question 6: Does the Council want to acknowledge the Maine mahogany quahog fishery in FMP goals and objectives?

Amendment 10 to the SCOQ FMP in 1998 recognizes and provides for the continuation of a small fishery for ocean quahogs in federal waters off the state of Maine. Amendment 10 recognizes the overall objectives of the SCOQ FMP established by Amendment 8 and specifies an additional set of objectives[1]. The FMAT suggests that the Council consider whether this fishery should be acknowledged in overall FMP objectives. The FMAT also notes that the existence of amendment-specific objectives reinforces the need to clearly identify overall FMP objectives as guidance that should be carried forward into future actions.

Question 7: If the Council chooses to consider the draft goals and objectives proposed by the FMAT (Outcome 2), is the wording appropriate?

The FMAT and members of the public noted that the wording of goals and objectives is very important. The FMAT suggests the Council carefully consider the wording of each proposed goal and objective, possible interpretations and consequences, and the balance among goals and objectives as a whole.

[1] The additional objectives specifically for Amendment 10 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP) are:

1. Protect the public health and safety by the continuation of the State of Maine's PSP (Paralytic Shellfish Poisoning) monitoring program for ocean quahogs harvested from the historical eastern Maine fishery.
2. Conserve the historical eastern Maine portion of the ocean quahog resource.
3. Provide a framework that will allow the continuation of the eastern Maine artisanal fishery for ocean quahogs.
4. Provide a mechanism and process by which industry participants can work cooperatively with Federal and State management agencies to determine the future of the historical eastern Maine fishery.

3.2.2 Outcome 2: Revised goals and objectives

The FMAT developed the following goal statements, optional objectives, and questions for the Council's consideration. These goals are derived from the existing SCOQ FMP objectives, statutory requirements of the Magnuson-Stevens Act (MSA), and feedback from planning conversations and public comment; and are reframed as overarching long-term aspirations. The FMAT notes that several long-term goals are embedded within the current SCOQ FMP objectives. The proposed goals and objectives are an effort to distinguish between longer-term goals and shorter-term objectives, simplify and clarify the wording and intent of the current objectives, and provide meaningful long-term guidance. The FMAT believes that the proposed goals are longer-term and would not need to be revised frequently. The objectives, though shorter-term, describe ongoing practices to maintain rather than action items to be completed.

This section includes a summary of the five goals and supporting objectives recommended by the FMAT, followed by a discussion of the FMAT's rationale for each proposed objective and an explanation of how the proposed goal and/or objectives relate to the current FMP objectives (e.g., an update, reorganization, or new content).

Summary of revised goals and objectives

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.

- Objective 2.1: Promote compatible regulations between state and federal entities.
- Objective 2.2: Promote coordination with the New England Fishery Management Council.
- Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.

- Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.

- Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.
- Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.

- Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

Goal 1: Biological sustainability

> Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

FMAT Discussion

Goal 1 is an update and simplification of the "conserve and rebuild" language from current Objective 1 (*Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.*) This revision reflects the current status of the stocks, which are not overfished, undergoing overfishing, or undergoing rebuilding; and is versatile to provide guidance under all resource scenarios. This goal and the two objectives are consistent with the requirements of the MSA and are worded in a way that is more straightforward and understandable to the public.

The Council's recent review of summer flounder FMP goals and objectives may provide useful context for this proposed goal. The Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) considered a similarly worded goal for biological sustainability during their December 2015 review of summer flounder FMP goals and objectives, as part of the Comprehensive Summer Flounder Amendment. The FMAT for this amendment initially recommended a goal ("Ensure the biological sustainability of the summer flounder resource in order to maintain a sustainable summer flounder fishery") paired with two objectives ("Achieve and maintain a sustainable spawning stock biomass" and "Achieve and maintain a sustainable rate of fishing mortality.") The Council and Board recommended merging the two proposed objectives into a single objective that draws on the language of National Standard 1 to specifically address the topics of yield and avoiding overfishing, as follows: "Prevent overfishing, and achieve and maintain sustainable spawning stock biomass levels that promote optimum yield in the fishery." This proposed wording also builds on one of the original objectives for the FMP (Objective 3: Improve the yield from the fishery.) The Comprehensive Summer Flounder Amendment is ongoing and goals and objectives for this FMP have not yet been finalized.

Questions

- Does the Council want to develop one or more objectives related to this goal? For example, objectives could include "Maintain a sustainable biomass" and "Maintain a sustainable rate of fishing mortality." The FMAT notes that these objectives could reinforce and make explicit what is required by the MSA, though the FMAT feels adding objectives is not necessary.
- The Maine mahogany quahog fishery was developed after the current objectives were established. Does the Council want to explicitly acknowledge the Maine mahogany quahog fishery in goals and objectives? If so, where is the appropriate place to do so? An optional objective could read: Maintain the Maine mahogany quahog fishery.

Goal 2: Simplicity and efficiency

> Goal 2: Maintain a simple and efficient management regime.
> Objective 2.1: Promote compatible regulations between state and federal entities.
> Objective 2.2: Promote coordination with the New England Fishery Management Council.
> Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

FMAT Discussion

Goal 2 is a simplification and reorganization of the language in current Objective 2 (*Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.*) The words "maintain" and "promote" recognize that these aspects of managing the fisheries have been improved over time.

Objectives 2.1 and 2.2 are new ideas. The FMAT felt that promoting compatibility between state and federal regulations (Objective 2.1) is important "common sense" guidance for supporting simple and efficient management. Objective 2.2 was added in response to planning conversations and public comments and refers to the Council's interest in coordinating and having a presence when the New England Council develops management measures that may impact the SCOQ fisheries.

Questions

Current Objective 2 recognizes specific aspects of the management process for which managers should minimize the government and private cost of administering and complying with requirements. These include regulatory, reporting, enforcement, and research requirements.

- Does the Council want to continue to recognize these specific requirements, for example by adding them to Objective 2.3?

Goal 3: Stability

> Goal 3: Manage for stability in the fisheries.
> Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

FMAT Discussion

This goal is a simplification and reorganization that focuses on the overarching value of stability by drawing on the language of two current objectives, Objective 3 (*Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry*) and Objective 4 (*Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.*) Specifically, this overarching goal of stability addresses

the language of Objectives 3 and 4 referring to balancing harvesting, processing, and biological capacity; efficient utilization of capital resources, and long-term industry planning and investment needs.

The FMAT discussed the most appropriate terminology to describe stakeholders in the management of the surfclam and ocean quahog resources. FMAT members noted that the current objectives use the terms "industry" and "industry participants" and refer to both the harvesting and processing sectors. The FMAT also discussed whether the term "industry" explicitly includes the processing sector, and the relationship of the Council's management decisions to the processing sector. The FMAT suggested the phrase "surfclam and ocean quahog fisheries and fishing communities" as a simple and more encompassing term that includes all components of the SCOQ fishery.

Goal 4: Flexibility

> Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.
>
> Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.
>
> Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

FMAT Discussion

Goal 4 is an update and revision of Objective 4 (*Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs*) and focuses on the values of flexibility and adaptability. Goal 4 and Objectives 4.1 and 4.2 also acknowledge issues identified during planning conversations, including concerns about changing environmental conditions and the Council's implementation of an ecosystem approach to fisheries management.

Objective 4.1 is a new idea recommended by the FMAT. The Council is able to comment on proposed plans (e.g., wind energy development) that may impact fish habitat. The Mid-Atlantic Council also has a representative to the Mid-Atlantic Regional Planning Body. The FMAT recommended Objective 4.1 to recognize the opportunity for the Council to engage more proactively in ocean planning processes to consider and communicate the SCOQ fisheries' interests. The FMAT also recommended including the reference to long-term changes in Objective 4.2 to recognize the need to respond to both short and long-term changes, as current Objective 4 refers only to short term events.

Goal 5: Information

> Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.
>
> Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

FMAT Discussion

Goal 5 and Objective 5.1 are new and are not based on any of the current SCOQ FMP objectives. This goal and objective are based on feedback from planning conversations and scoping comments. The FMAT and public participants in the FMAT's webinar discussed the use of the words "support" and "promote" in Goal 5. Public participants noted that the SCOQ industry has been proactive in supporting

and investing in research, and preferred the word “support” for Goal 5. The FMAT agreed that the use of the word “support” in Goal 5 is consistent with the Council’s role and responsibilities relative to science, monitoring, and data collection. The use of “promote” in Objective 5.1 recognizes that the Council can encourage and provide guidance to partners and other entities to focus research that will benefit management.

4.1 Appendix 1: Contributors

The Fisheries Forum requested input from members of the Council's SCOQ Committee and AP and additional state agency representatives in order to develop this document and to inform the FMAT's recommendations. Contributors shared feedback on fishery management plan goals and objectives for SCOQ management to help focus and frame the Council's discussion of this issue.

Fisheries Forum staff conducted 18 informal planning calls with Committee and AP members and state representatives involved in surfclam and ocean quahog management. In addition, Council staff collected public comments on this issue during scoping hearings held in July 2017.

The following individuals contributed to the development of this document through short planning calls.

Surfclam and Ocean Quahog Committee members

- Peter deFur, Appointee (VA)
- Peter Hughes, Appointee (NJ)
- Roger Mann, Appointee (VA)
- Stew Michels, Delaware Division of Fish & Wildlife
- Steve Heins, New York Department of Environmental Conservation
- Howard King, Appointee (MD)
- Wes Townsend, Appointee (DE)
- Patricia Bennett, U.S. Coast Guard
- Mike Ruccio, NOAA Fisheries
- Doug Potts, NOAA Fisheries

Surfclam and Ocean Quahog AP members

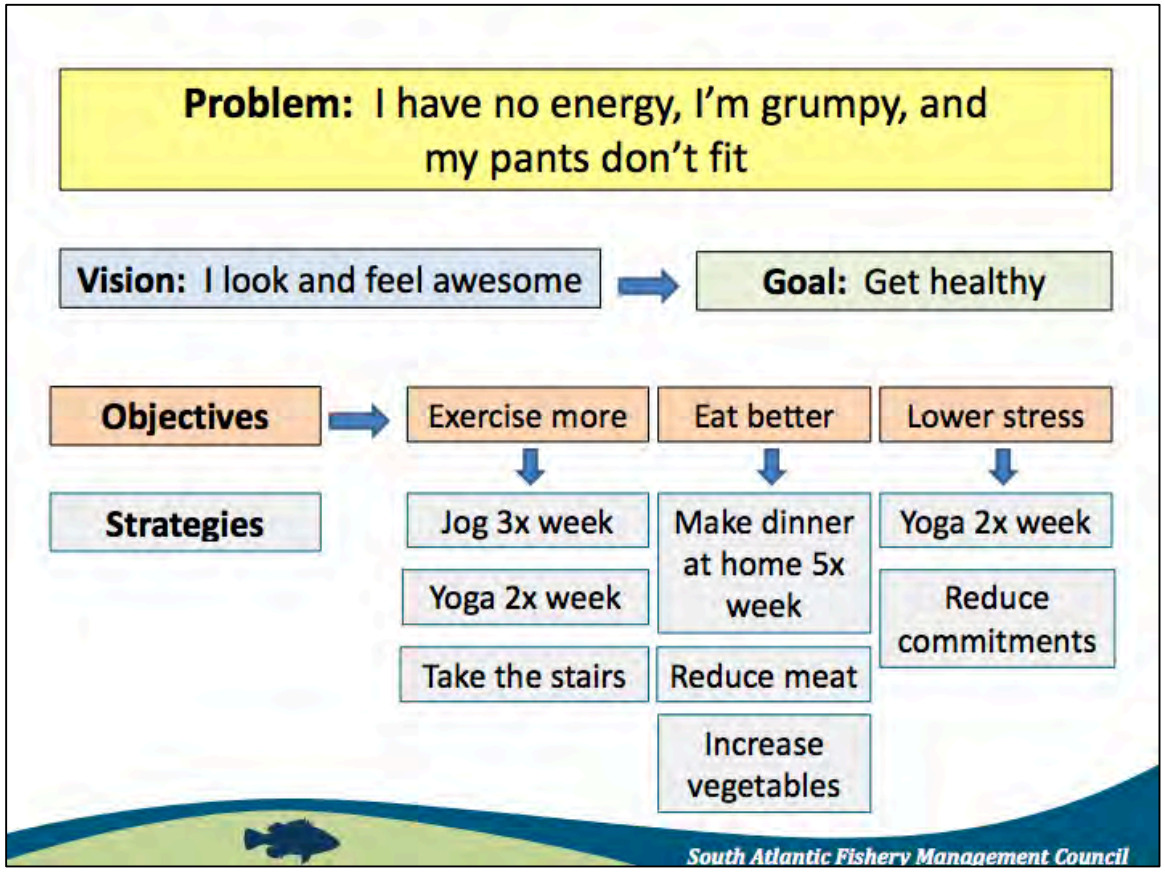
- Thomas Alspach (MD)
- Thomas Dameron (PA)
- Peter Himchak (NJ)
- Sam Martin (NJ)
- Joseph Myers (NJ) with Jeff Pike and Mike Kraft
- David Wallace (MD)

State agency representatives

- Tom Baum and Jeff Normant, New Jersey Division of Fish & Wildlife
- Terry Stockwell, Maine Department of Marine Resources

4.2 Appendix 2: South Atlantic Council example: Goals, objectives, and strategies

This diagram includes examples of goals, objectives, and strategies, and is excerpted from a staff presentation on strategic planning from the South Atlantic Fishery Management Council's March 2013 Council Visioning Workshop.



The full presentation is available online:
http://cdn1.safmc.net/wp-content/uploads/2016/11/28101424/2BB_Attach2b_StrategicPlanningPres-1.pdf

Additional information about the Council's Snapper-Grouper Visioning Process, and resources from past meetings, are available on the council's website.
http://www.safmc.net/resource-library/council-visioning-project

4.3 Appendix 3: Mid-Atlantic Fishery Management Council FMP goals and objectives

Summer Flounder, Scup, Black Sea Bass

1. Reduce fishing mortality in the summer flounder, scup, and black sea bass fisheries to assure that overfishing does not occur.
2. Reduce fishing mortality on immature summer flounder, scup, and black seabass to increase spawning stock biomass.
3. Improve the yield from the fishery.
4. Promote compatible management regulations between state and Federal jurisdictions.
5. Promote uniform and effective enforcement of regulations.
6. Minimize regulations to achieve the management objectives stated above.

Bluefish

1. Increase understanding of the stock and of the fishery.
2. Provide the highest availability of bluefish to U.S. fishermen while maintaining, within limits, traditional uses of bluefish.
3. Provide for cooperation among the coastal states, the various regional marine fishery management councils, and federal agencies involved along the coast to enhance the management of bluefish throughout its range.
4. Prevent recruitment overfishing.
5. Reduce the waste in both the commercial and recreational fisheries.

Spiny dogfish

1. Reduce fishing mortality to ensure that overfishing does not occur.
2. Promote compatible management regulations between state and Council jurisdictions and the US and Canada.
3. Promote uniform and effective enforcement of regulations.
4. Minimize regulations while achieving the management objectives stated above.
5. Manage the spiny dogfish fishery so as to minimize the impact of the regulations on the prosecution of other fisheries, to the extent practicable.
6. Contribute to the protection of biodiversity and ecosystem structure and function.

Squid, Mackerel, Butterfish

1. Enhance the probability of successful (i.e., the historical average) recruitment to the fisheries.
2. Promote the growth of the U.S. commercial fishery, including the fishery for export.
3. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP.
4. Provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy.
5. Increase understanding of the conditions of the stocks and fisheries.
6. Minimize harvesting conflicts among U.S. commercial, U.S. recreational, and foreign fishermen.

Surfclam and Ocean Quahog

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of surfclam and ocean quahog management to minimize the government and private cost of administering and complying with

regulatory, reporting, enforcement, and research requirements of surfclam and ocean quahog management.

3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of surfclam and ocean quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

Tilefish

The overall goal of this FMP is to rebuild tilefish so that the optimum yield can be obtained from this resource. To meet the overall goal, the following objectives are adopted:

1. Prevent overfishing and rebuild the resource to the biomass that would support MSY.
2. Prevent overcapitalization and limit new entrants.
3. Identify and describe essential tilefish habitat.
4. Collect necessary data to develop, monitor, and assess biological, economic, and social impacts of management measures designed to prevent overfishing and to reduce bycatch in all fisheries.

4.4 Appendix 4: Example of revised goals and objectives provided by Bumble Bee Seafoods

The following is an excerpt from scoping comments provide in a letter from Bumble Bee Seafoods to the Mid-Atlantic Fishery Management Council, July 12, 2017. These comments are the only example of a new full set of goals and objectives suggested by contributors to this project, and are included in this document for reference.

Bumble Bea Seafood supports the Council's effort to revise the goals and objectives for the OQSC FMP as they are not consistent with today's fishery and management issues. Provided below is a list of revised/rewritten goals and objectives which we believe more accurately reflect today's fishery:

1. Conserve and sustainably manage the Atlantic surf clam and ocean quahog resources throughout the management unit to prevent overfishing and ensure that the resource is not overfished while achieving optimum yield from the resource.
2. Promote opportunities for government and industry scientific research, especially into the effects of warming ocean temperatures and changing ocean conditions on the OQSC resources, and research necessary for sound management decisions.
3. Provide a simplified management regime and regulatory framework that minimize government and industry cost while allowing participants to achieve economic efficiency including efficient utilization of capital resources by industry.
4. Promote compatible management regulations between state and Councils jurisdiction.
5. Strengthen coordination between the New England Fishery Management Council and the Mid-Atlantic Fishery Management Council so that actions by one Council do not negatively impact the ability of industry to achieve optimum yield.

Appendix C

Table 1. Essential Fish Habitat descriptions for federally-managed species/life stages in the U.S. Northeast Shelf Ecosystem that are vulnerable to bottom tending fishing gear.

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
American plaice	juvenile	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 150	Fine grained sediments, sand, or gravel
American plaice	adult	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 175	Fine grained sediments, sand, or gravel
Atlantic cod	juvenile	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	25 - 75	Cobble or gravel
Atlantic cod	adult	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	10 - 150	Rocks, pebbles, or gravel
Atl halibut	juvenile	GOM and GB	20 - 60	Sand, gravel, or clay
Atl halibut	adult	GOM and GB	100 - 700	Sand, gravel, or clay
Barndoor skate	juvenile/ adult	Eastern GOM, GB, SNE, Mid-Atlantic Bight to Hudson Canyon	l0-750, most < 150	Mud, gravel, and sand
Black sea bass	juvenile	GOM to Cape Hatteras, NC, including estuaries from Buzzards Bay to Long Island Sound, Gardiners Bay, Barnegat Bay to Chesapeake Bay, Tangier/ Pocomoke Sound, and James River	1 - 38	Rough bottom, shellfish/ eelgrass beds, manmade structures, offshore clam beds, and shell patches
Black sea bass	adult	GOM to Cape Hatteras, NC, including Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay, and James River	20 - 50	Structured habitats (natural and manmade), sand and shell substrates preferred
Clearnose skate	juvenile/ adult	GOM, along continental shelf to Cape Hatteras, NC, including the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay mainstem	0 – 500, most < 111	Soft bottom and rocky or gravelly bottom
Haddock	juvenile	GB, GOM, and Mid-Atlantic south to Delaware Bay	35 - 100	Pebble and gravel
Haddock	adult	GB, eastern side of Nantucket Shoals, and throughout GOM	40 - 150	Broken ground, pebbles, smooth hard sand, and smooth areas between rocky patches
Little skate	juvenile/ adult	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes estuaries from Buzzards Bay south to mainstem Chesapeake Bay	0-137, most 73 - 91	Sandy or gravelly substrate or mud
Ocean pout	eggs	GOM, GB, SNE, and Mid-Atlantic south to Delaware Bay, including the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay and Cape Cod Bay	<50	Generally sheltered nests in hard bottom in holes or crevices
Ocean pout	juvenile	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, and Cape Cod Bay	< 50	Close proximity to hard bottom nesting areas

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Ocean pout	adult	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, MA Bay, Boston Harbor, and Cape Cod Bay	< 80	Smooth bottom near rocks or algae
Pollock	adult	GOME, GB, SNE, and Mid-Atlantic south to New Jersey and the following estuaries: Passamaquoddy Bay, Damariscotta R., MA Bay, Cape Cod Bay, Long Island Sound	15 – 365	Hard bottom habitats including artificial reefs
Red hake	juvenile	GOM, GB, continental shelf off SNE, and Mid-Atlantic south to Cape Hatteras, including the following estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, and Chesapeake Bay	< 100	Shell fragments, including areas with an abundance of live scallops
Red hake	adult	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras, these estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, Delaware Bay, and Chesapeake Bay	10 - 130	In sand and mud, in depressions
Redfish	juvenile	GOM, southern edge of GB	25 - 400	Silt, mud, or hard bottom
Redfish	adult	GOM, southern edge of GB	50 - 350	Silt, mud, or hard bottom
Rosette skate	juvenile/ adult	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33-530, most 74-274	Soft substrate, including sand/mud bottoms
Scup	juvenile/ adult	GOM to Cape Hatteras, NC, including the following estuaries: MA Bay, Cape Cod Bay to Long Island Sound, Gardiners Bay to Delaware inland bays, and Chesapeake Bay	0-38 for juv 2-185 for adult	Demersal waters north of Cape Hatteras and inshore estuaries (various substrate types)
Silver hake	juvenile	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, ME, MA Bay to Cape Cod Bay	20 – 270	All substrate types
Summer Flounder	juvenile/ adult	GOM to Florida – estuarine and over continental shelf to shelf break	0-250	Demersal/estuarine waters, varied substrates. Mostly inshore in summer and offshore in winter.
Smooth skate	juvenile/ adult	Offshore banks of GOM	31–874, most 110-457	Soft mud (silt and clay), sand, broken shells, gravel and pebbles
Thorny skate	juvenile/ adult	GOM and GB	18-2000, most 111-366	Sand, gravel, broken shell, pebbles, and soft mud
Tilefish	juvenile/ adult	Outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary	100 - 300	Burrows in clay (some may be semi-hardened into rock)
White hake	juvenile	GOM, southern edge of GB, SNE to Mid-Atlantic and the following estuaries: Passamaquoddy Bay, ME to Great Bay, NH, Massachusetts Bay to Cape Cod Bay	5 - 225	Seagrass beds, mud, or fine grained sand
Winter flounder	adult	GB, inshore areas of GOM, SNE, Mid- Atlantic south to Delaware Bay and the estuaries from Passamaquoddy Bay, ME to Chincoteague Bay, VA	1 - 100	Mud, sand, and gravel

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Winter skate	juvenile/ adult	Cape Cod Bay, GB, SNE shelf through Mid-Atlantic Bight to North Carolina; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 371, most < 111	Sand and gravel or mud
Witch flounder	juvenile	GOM, outer continental shelf from GB south to Cape Hatteras	50 - 450 to 1500	Fine grained substrate
Witch flounder	adult	GOME, outer continental shelf from GB south to Chesapeake Bay	25 - 300	Fine grained substrate
Yellowtail flounder	adult	GB, GOM, SNE and Mid-Atlantic south to Delaware Bay and these estuaries: Sheepscot River and Casco Bay, ME, MA Bay to Cape Cod Bay	20 - 50	Sand or sand and mud

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Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 25, 2019

To: Chris Moore, Executive Director

From: Jessica Coakley and José Montañez, Staff

Subject: Atlantic Surfclam and Ocean Quahog (SCOQ) Excessive Shares Amendment - Staff Recommendations

Introduction

The following provides the staff recommendation for measures contained within the SCOQ Excessive Shares Amendment to the Fishery Management Plan (FMP). More detail on the complete suite of measures under consideration can be found in the Amendment document.

Goals and Objectives

Staff recommend the Council revise the objectives for the SCOQ FMP and adopt the revised goals and objectives as drafted by the Fishery Management Action Team (FMAT).

Goals and objectives are a public statement from the Council describing what the FMP is trying to accomplish and the Council's longer-term intent and guidance for the fisheries. They should be written in a manner that is concise, clear to stakeholders and the public, and remain relevant over time.

The current SCOQ FMP objectives reflect the desired outcomes of Amendment 8 which implemented the individual transferable quota (ITQ) program. Many of those objectives were short-term and aspects of those objectives have already been achieved. Revising FMP goals and objectives would allow the Council to acknowledge the improvements that have been made to the management of the SCOQ fisheries, recognize what is working well, and focus on maintaining and sustaining these improvements in the long-term.

As noted in the goals and objectives synthesis document,[1] some of the specific terms used in the objectives are unclear to those who were not involved at the time Amendment 8 was developed or are unfamiliar with economic jargon. Terms are confusing because they are not defined or have

[1] Synthesis Document for Review of Goals and Objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan. Prepared by Fisheries Leadership & Sustainability Forum (October 2017). See Appendix B of Excessive Shares Amendment.

multiple definitions (e.g. economic efficiency, economic dislocations, etc.). In addition, the current objectives are complicated and combine topics (e.g. Objective 1 addresses both biology and economics).

The FMAT drafted goals and objectives drew from themes in the original objectives but simplified the terminology and focused on longer-term goals. They were crafted around goal areas focused on sustainability, a simple and efficient management regime, managing for stability, management that is flexible and adaptive to changes, and the promotion of science and research. The staff believe that these better reflect the Council's long-term intent for these fisheries.

The current objectives were adopted in 1988 through Amendment 8 to the SCOQ FMP:

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short-term events or circumstances and consistent with overall plan objectives and long-term industry planning and investment needs.

The FMAT proposed revisions to the goals and objectives recommended by staff are as follows:

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.

Objective 2.1: Promote compatible regulations between state and federal entities.

Objective 2.2: Promote coordination with the New England Fishery Management Council.

Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.

Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.

Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.

Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.

Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

Excessive Shares Alternatives

Staff recommend the Council select Sub-Alternative 4.4: Two part-cap - Quota share ownership cap and a second, annual allocation cap based on the possession of cage tags (Surfclams: 35/65%, Ocean quahogs: 40/70%), with the selection of the family affiliate level and the cumulative 100% model for tracking of ownership.

If fully consolidated, this sub-alternative could potentially result in a minimum of three large entities participating in the surfclam fishery (i.e., 35%, 35%, 30%) and three large entities participating in the ocean quahog fishery (i.e., 40%, 40%, 20%). In addition, this alternative would limit the exercise of control, through possession of tags as limited by the second part of the cap.

This alternative represents a compromise on the part of the fishing industry, from their initial recommendation for no action (100%) or the 95% alternative which was added by the SCOQ Committee on the recommendation of the industry, neither of which would have addressed the market power or socioeconomic concerns raised by the Council in their excessive shares definition. With no restriction on ownership or consolidation for nearly 30 years, sub-alternative 4.4 will allow for some additional efficiencies in the fisheries (through further consolidation) and a reasonable number of entities to exist if fully consolidated.

In addition, staff recommend the family affiliate level. Most of the connections in these fisheries are already connected at the individual/business and family level; therefore, the corporate officer level added little additional information to the process in terms of ownership connections. Including just the family level captured the bulk of control through both individual/business and familial affiliations. This is the same affiliate level used in the Council's other individual fishing quota (IFQ) program, golden tilefish.

The staff also recommend the cumulative 100% model for tracking. This is the same tracking model that is used for the Atlantic sea scallop fishery. This fishery also has large numbers of transfers and transactions that occur within the fishing year and uses this tracking model to account for both ownership and control in the fishery. Based on discussions with the Analysis Program and Support Division (APSD), this would be the simplest tracking model, the least likely to create issues with tracking within year transactions, and it should result in the lowest cost recovery burden for ITQ holders. In addition, under the actual percentage model, individuals or businesses could circumvent the cap system by modifying their individual or business percent ownership in a company to ensure they remain below any excessive share quota ownership cap or cage tag possession cap requirements. Under the cumulative 100% model, if you touch it through ownership of quota shares or cage tag possession, it is tagged to you within the system. As such, staff recommend this as the most straightforward and efficient model for tracking, with the benefit that it follows an already proven model for tracking in the Northeast.

Excessive Shares Review Alternatives

Staff recommend Alternative 2 that would require the periodic review of the excessive share measures at least every 10 years or as needed.

Conditions in the fisheries have changed over time and are likely change in the future; therefore, an excessive shares measure established at an appropriate level now could become inefficiently

high or low over time. The staff recommend the Council require periodic review of these measures because it should, as part of its responsibilities to manage these fisheries on behalf of the nation, routinely review its management regimes, particularly those that limit access to the fisheries. This review could be linked to the Catch Share Program Review which should be conducted every 7 years based on National Marine Fisheries Service (NMFS) Procedural Instruction 01-121-01 (Guidance for Conducting Review of Catch Share Programs).

Framework Adjustment Process Alternatives

Staff recommend Alternative 2, which would add excessive shares cap level to the list of measures to be adjusted via framework.

This frameworkable item would allow modifications to the cap value only and not the underlying cap system, and only if the modification would not result in an entity having to divest. This modification would allow the Council to make changes to the caps in a timely manner, through a public process of Council meetings and a rulemaking process. This would not preclude the holding of advisory panel meetings or other steps to solicit input on the issue, that are frequently done with Frameworks. While frameworks typically take a minimum of 1 year to be completed, its more common for them to take up to 2 years with rulemaking. An Amendment process, if this was not frameworkable, could take several years to complete. Given limited staff resources, the staff recommend the Council support efficiencies in the process wherever possible.

Multi-year Management Measures Alternatives

Staff recommend Alternative 2, where specifications will be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule.

This alternative would provide additional flexibility as specifications could be set until a new surfclam and/or ocean quahog stock assessment is produced. New specifications of annual quotas would be prepared in the final year of the quota period, unless there is a need for interim quota modifications. Given limited staff resources, the staff recommend the Council support efficiencies in the process wherever possible, which allows both the Council and the staff to dedicate resources to other ongoing or more pressing fishery management issues.

An Expanded Analysis of Market Power in the Surfclam and Ocean Ouahog (SCOQ) Fisheries

Lee G. Anderson

This statement was written independently and the views expressed are those of the author and while he is a member of the Scientific and Statistical Committee (SSC), the statement cannot and should not be considered an SSC document. The purpose is to present a more detailed and complete analysis on the subject of the comments provided in Attachment 3 to the May 2019 SSC Meeting report, taking advantage of some of the written and oral comments on the report submitted to the Council to focus on areas of contention or confusion. The Council family needs to understand the whole story.

The main point of this document can be summarized as follows. There are conditions in the SCOQ fisheries that suggest that oligopsony power exists in the market for quota shares. The Magnuson Stevens Act mandates that Councils should address market power problems. It can be shown that Alternatives 5 and 6 in the excessive shares amendment were designed to address these problems and if implemented will solve them, albeit with some very significant redistribution effects.

The essence of the SSC comment can be found in following quote.

> The SCOQ industry and ITQ program, however, is quite special and almost unique in at least three respects. First, catch must be processed before sale; more than simply heading and gutting. Second, there are few buyers of the processed product (few large companies e.g., Campbell's Soup Company). Third, for a number of years the annual TAC has not been harvested for either species.

The fact that the catch must be processed before it can be sold is critical to the operation of the SCOQ ITQ program. It is also true that there are only a few entities that have the capital equipment that enables them to do this processing. Further this processing equipment is expensive and somewhat specialized. As will be described below, the limited number of processors is a key element of where the oligopsony market power enters the analysis.

The report also noted that the SCOQ ITQ program is the only ITQ program in the world where the total TAC is not harvested. This fact is well known and is documented in the 2019 Atlantic Surf Clam Fishery Information Document (Table 1, page 5) and the 2019 Ocean Quahog Fishery Information Document (Table 1, page5) both of which can be found at

http://www.mafmc.org/ssc-meetings/2019/may-7-8

The same tables provide the OFLs and ABCs for surf clams and ocean quahogs. Table 1 is constructed using the information in these two tables and it shows the recent history of the quota surplus in both fisheries. In surf clams between 64% and 71% of the quota was taken, while in the quahog fishery landings were between 58% and 66% of the quota. While this shows the recent catch histories, in the five years immediately before and after the implementation of the ITQ program landings were always above 90% of the quota and in many years the quota was completely taken.[1] Why is this not so today and what are the ramifications for short- and long-term Council policy?

[1]See page 20 of the council document "**Overview of the Surfclam and Ocean Quahog Fisheries and Quota Considerations for 2010 "**

It is not widely known, but starting in 2010 for SC and 2011 for OQ the stock assessments included an OFL and an ABC value. The third column shows the ratio of the current quota to the annual ABC which is the normal basis for setting TACs in all other species managed by the council[2]. If the 2010 ABC value was used to set the TAC, there would have been about a fourfold increase in the quota. In almost any fishery imagine how happy the participants with a 20% increase in TAC to say nothing of a 400% increase. The processing sector in the SCOQ fishery, however, did not greet this potential increase in quota with any joy at all. They did not want an increase in allowable harvest and they argued for no changes in the quota. That action was certainly consistent with an industry that is trying restrict output.

Table 1. Percent of quota harvested, quota as a percent of ABC, and percent of ABC harvested for Surfclams 2010-2017 and Ocean quahogs, 2010-2018 (2019 Surfclam and Ocean Quahog Fishery Information Documents MAFMC 2019

Surfclams	Annual quota = 3,400,000 bu		
year	% quota harvested	quota/ABC	% ABC harvested
2010	69%	27%	19%
2011	72%	27%	20%
2012	69%	28%	19%
2013	71%	27%	19%
2014	70%	43%	30%
2015	69%	51%	35%
2016	69%	54%	37%
2017	64%	59%	38%
Quahogs	Annual Quota = 5,333,000 bu		
Year	% quota harvested	quota/ABC	% ABC harvested
2011	59%	93%	55%
2012	66%	93%	61%
2013	61%	93%	56%
2014	60%	93%	56%
2015	57%	93%	53%
2016	58%	93%	54%
2017	59%	93%	55%
2018	60%	54%	32%

In fact, contrary to what is done in every other fishery under the Council's jurisdiction, the quota did not increase to match the ABC, nor has it done so for the past 10 years. The final column shows the ratio of

[2] The ABCs in the referenced tables are shown in different units than the quota, but using the comparable landings in bushels and metric tons it is possible to derive a conversion factor.

annual landings to the ABC for the last decade. Of course, ABC is the biological maximum under the law and other factors are considered in setting a quota, but a TAC up to 81 percent below the ABC for surfclams and up to 68 percent below the ABC for quahogs indicates there is a lot of potential harvest that is not being provided to consumers.

In the past when Council members noted the large portion of the TACs that was not taken, some suggested that the TAC should be lowered to the market level of output. The industry responded with the argument that this would hurt market development because they could not realistically approach the big chowder manufacturers to make more sales if they were always up against the TAC. While there may be a grain of truth in that argument, those fears could be reduced or eliminated by a clear and actionable policy that allowed for automatic framework adjustment of the TAC if new contracts or markets are developed. More to the point, the processors are very much aware of the power they obtain from having the excess TAC, which is why they hide behind the market expansion argument.

Before going further, it will be useful to specify some definitions. Market structure analysis describes the organizational and other characteristics of a market that affect the nature of competition and price. It is generally the subject of one or two chapters in elementary and advanced microeconomics texts, which a interested reader may pursue for further details. However, for the present discussion, pure competition refers to a market where there are many buyers and many sellers none of which has power over the price of output. Monopoly and oligopoly refer to markets where there is one or few sellers, (respectively) of a particular good and the sellers have some power over the price. Monopsony and oligopsony refer to markets where there is one or few buyers, respectively, and the buyers have some power over price.

For purposes here oligopsony is a market situation where the presence of few buyers and many suppliers creates a buyer's market. The discussion here concerns markets where there are few buyers which may have the potential to set the price. Whether they will or not depends upon the definition of "few" and the nature of other organizational characteristics of the market. It should be understood that this is a definitional issue. (And to be fair, it should be noted that the May SSC comment should have explicitly referred to oligopsony.)

The market structure literature also addresses why a single buyer or seller can maintain their position over time given that the existence of profits produces an incentive for other buyers or producers to enter the markets. It is explained by what are called barriers to entry which includes, among other things, patents, high transportation costs and specialized and expensive capital equipment.

Although, or perhaps because, it contains several errors, the analysis contained in the comments submitted to the Council on the Excessive Shares Amendment by the industry consultant, Dr. Thomas Sproul, provides a useful spring board to demonstrate the nature of the market power in the SCOQ fishery.[3]

[3] See letter to Dr. Christopher Moore dated September 13, 2019 which can be found at:

http://www.mafmc.org/council-events/2019/scoq-committee-sept17

Sproul's Figures 2, which is reproduced below, is meant to show the operation of the market for annual quotas shares. It is worth noting that since there is a one-to-one correspondence between quota shares and output, the horizontal axis represents both units of quota shares and units of output. But as will be shown below, the Sproul analysis is incomplete and theoretically flawed as a description of the operation of the SCOQ ITQ program because the three special elements mentioned in the SSC report are not adequately treated. But for now, consider the supply and demand curves as described in the document. Consider first the supply curve of tags which describes the behavior of holders of annual quota. In defining the curve Sproul states:

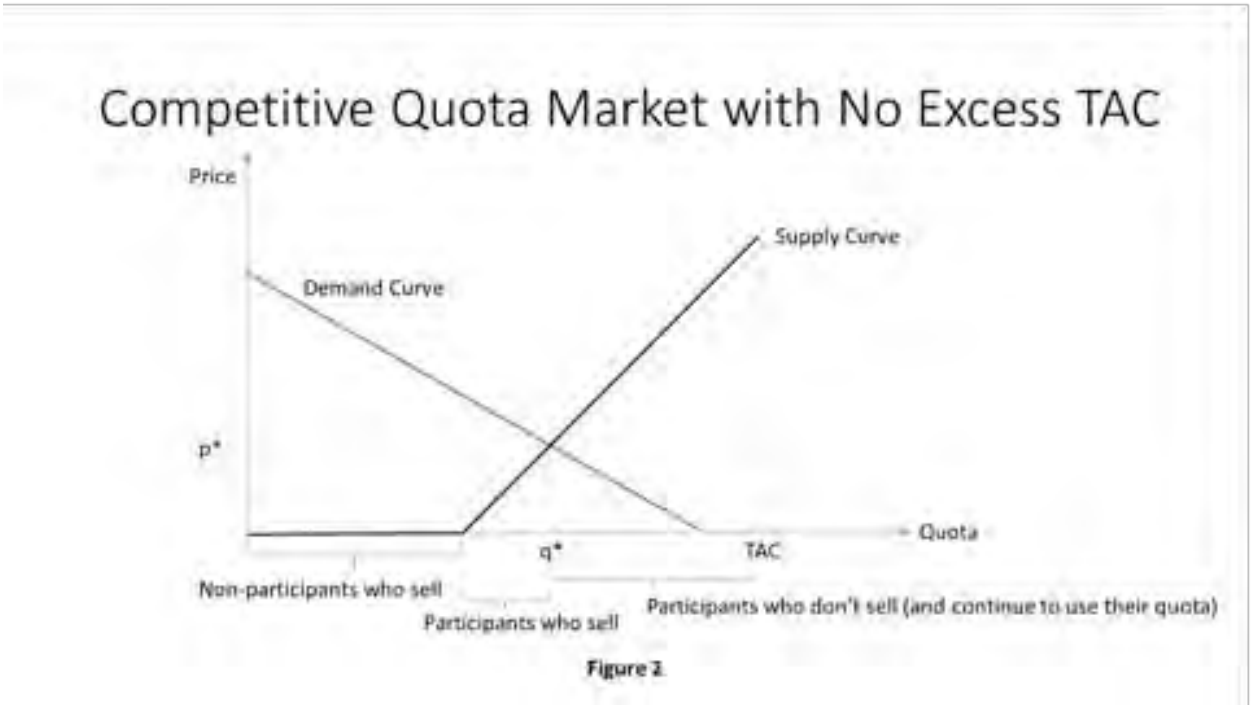


Figure 2

> Specifically, economic reasoning dictates the supply of quota is defined by the opportunity costs of sellers – they will not accept a price less than their outside option. All quota holders who can use quota profitably will have that profit as an opportunity cost of selling quota, but non-participant quota holders cannot use quota profitably and thus should sell for whatever they can get.

As drawn, the Sproul supply curve for tags is initially coterminous with the horizontal axis but then begins to have a positive slope and it terminates at the vertical TAC line. The flat portion is attributed to non-participants which presumably means individuals who own quota but do not have boats that enables them to participate in the industry. Their "outside option" is zero.

Now consider the upward sloping portion which refers, I must assume, to participants who own both boats and tags. Each point on the curve represents the opportunity cost in terms of foregone earnings for boat owners that also own quota. The ones with the lowest opportunity cost (the least efficient) will

come into the market first, and the more efficient will only be enticed to sell quota at higher prices. Their "outside option" according to this analysis is positive.

A serious shortcoming of the analysis is that neither the role of processors nor the nature of the demand curve is described. But given the flow of the analysis, most likely the demand curve in the Sproul analysis is the sum of individual demand curves of all entities that have the ability to harvest and need annual quota shares to participate in the fishery.

Consider now the stated results from the interpretation of Sproul's Figure 2 given the above assumptions. The equilibrium in the quota market is at p* and q* at the intersection of the (undefined) demand curve and the supply curve. In the graph, the distance between q* and the TAC line is labeled as "participants who do not sell and continue to use their quota." Since the horizontal axis is measured in units of quota (or output), it is hard to see how participants can be measured on the horizontal axis. But that aside, a friendly interpretation would be that the distance between q* and the TAC line represents the amount of quota that is not sold on the market but is used by participating quota owners with boats. To those familiar with workings of the SCOQ fishery this sounds a bit silly. (How can participating quota owners use their quota without access to processing? Where do they sell unshucked clams?) It is true, however, that Figure 2 provides a pretty good description of how other ITQ programs would work where raw product can be readily sold.[4] The notion of a flat segment on the supply curve for quota is interesting and correct but it is not carried to the logical conclusion with respect to the need for processing in the SCOQ fishery.

For this to be an accurate description of the workings of the SCOQ ITQ program, it must consider the three unique features mentioned in the SSC report. Harvested clams must be processed before sale to consumers. To create a correct depiction of the operation of SCOQ fishery, both the supply and demand curves must be constructed taking the need for processing into account. Consider first the supply curve. It takes more than the possession of tags and a boat to be able to participate in the fishery. Access to processing capacity is also necessary. If one does not have access to processing capacity, the opportunity cost of the annual quota is zero. The outside option for the quota shares is zero. The bottom line is that the supply curve of quota for all quota holders, whether they own a boat or not, will be coterminous with the horizontal axis out to the TAC line as depicted in by the bold lines in Figure A below. The fact that some of the quota is owned by processors will be addressed below.

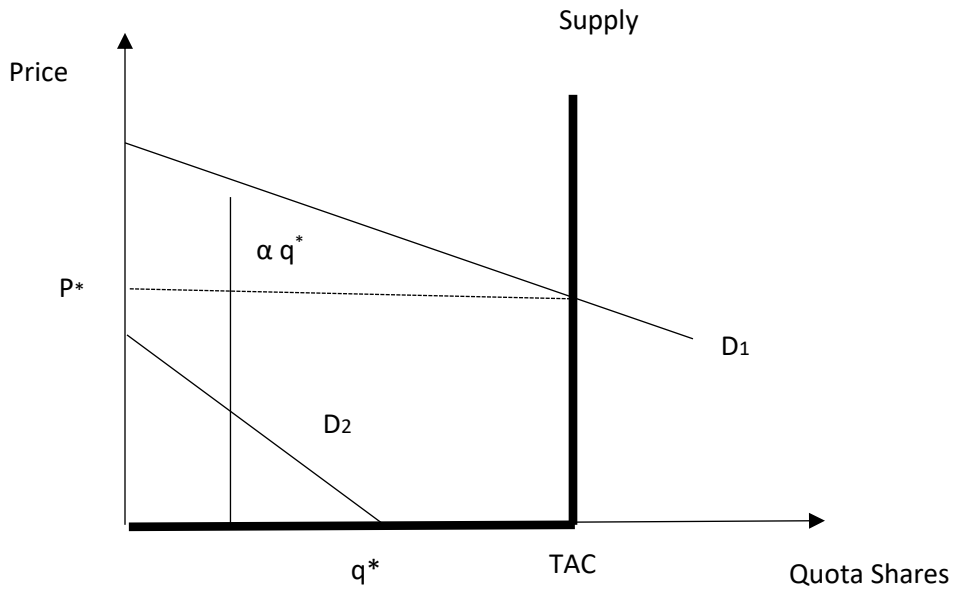
As a sidelight note that because the supply curve is vertical at the TAC line, there is no monopsonist marginal expenditure curve as shown in Sproul's Figures 4 and 5. That analysis does not apply to the SCOQ fisheries. But as will be shown below there are other organizational characteristics that create market power for buyers.

[4] It does show how a working quota market can allocate production between boats that are allocated quota and other boats that do not own quota but are more efficient and wish to participate. It follows from the graph that the marginal value of output from those that purchase quota is equal to the marginal value of output of quota owning participants. The harvest is efficiently spread between quota owners and other boats. That is supposed to be how ITQ programs create incentives for efficient harvest.

In order to capture the need for processing, and to complete the analysis given the definition of the supply curve, the processors demand curve for annual quota shares needs to be derived. The relevant demand curve is the sum of the processors individual demand curves. Going back to the definitions, whether this is a competitive or an oligopsonist market depends on whether it is the sum of "many" or "few" firms. The fact that processors can own quota shares is consistent with this analysis. They can be viewed as buying quota shares from themselves. Now that we have correctly defined the demand and supply curves, it is possible to provide a complete and accurate analysis the market for quota shares in the SCOQ fisheries, something that is not possible in the incomplete Sproul analysis.

Consider first the demand curve labeled D_1 in Figure A. If there are many firms, they will be forced to compete against each other for the limited amount of annual quota, and theory tells us that it will be sold at a price of P^*. However, if there are few buyers of quota, which means that by definition it is an oligopsonistic market, the outcome will depend upon other characteristics of the market. For example, if the transaction costs of bargaining between processing firms are low, and there are ways to enforce agreements between them, there might be a tendency for processors to agree to limit bidding against each other and the price may be lower than P^*. The possibility for oligopsony market power exists even when all of the quota will be sold.

Figure A



Consider now the demand curve labeled D_2 in Figure A. (Ignore for the moment the line labeled αq^*) The three unique features of the SCOQ ITQ market can all be depicted in this situation. First, the fact that clams require processing and cannot be sold directly to consumers is the reason for horizontal supply curve out to the TAC line. In Sproul's terminology, the quota shares do not have an "outside

option." Second, the demand curve D_2 intersects the horizontal axis at q^* which is less than the TAC. All of the quota shares cannot be sold. And here is the easy part, given that there are only a few processors in the industry, D_2 is the summation of the demand curves of only a few processors, which by definition makes this a market with oligopsony power. But this is more than an issue of definitions. Combined these three elements provide the organizational characteristics that provide market power to the processors. The amount of quota shares on the market is equal to TAC, but the processors only want to buy q^* which is less than that amount. The processors can choose who they will buy from and they do not need to buy all the tags. Those that are not purchased have no alternative value to owner. It is clearly a buyers' market. When the demand curve intersects the horizontal axis before it hits the supply curve, there is no graphical solution to the equilibrium price. The technical solution would be a zero price but common-sense rules that out. There will be positive price which will be determined by bargaining between processor and quota owners, with processors having the upper hand in the bidding.

There is a comment from one quota holder on the same Council webpage that gives some insight in to how the bargaining in this restricted market takes place. It is the very last one in the second batch and it is reproduced here in its entirety. [5]

> This public comment is in reference to the Excessive Shares issue.
>
> Excessive Shares have been an ongoing conflict with processors and independent ITQ shareholders for some time now. Excessive Shares is very much in relation to quota allocation. Quite simply, if the quota allocation is set at a high level over what the demand/market can handle then you give large shareholders an advantage over other independent shareholders. The high quota over demand gives them a "bump" in their own quotas to manipulate the industry by squeezing out independent shareholders so that they can control every aspect of the clam industry.
>
> I have heard from other council meetings that the processors complain constantly about, and I quote, "Couch, Armchair, and Non-Participant" shareholders should have no stake or claim to the ITQ system because they "just want to collect free money and have no risk or investment" in the clam industry.
>
> Here is my response to those comments.
> First of all, I earned those ITQ shares under the rules and guidelines put forth by NOAA and The Fisheries Council. A lot of the clams I caught over the years went to other company/boat owners in which I got a paycheck but no stake in the resource. These processors were supplied a product they needed to make their money. Then when I was able to get my own boat and buying and leasing quota (investment) and put a lot of years on the ocean (risk, picking up fishing colleagues out of the ocean, some alive and some dead) I take a lot of offense to those comments by some people who only got their feet wet by visiting the beach.

[5] https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5d7e7d9505c9e06a3a65f9be/1568570805736/Vol+II-Written+Comments+22-29_2019-09-13.pdf on page 736.

> Additionally, some of the independent shareholders had to sell their boats due to health, retirement, or maybe by not being able to make boat payments due to the processors always favoring their own vessels with large quotas. One thing they like to do is say we can't lease your clams but if you are willing to sell your allocation, at rock bottom prices, we'll take them off your hands. To some independent ITQ holders this becomes the only option and gives the processors more of their own allocation to control the industry.
>
> I am sending this public comment anonymously due to the fact that I'm sure there would be retribution within the clam industry if I signed my name to it.

This is clearly an indication that the processors have the upper hand in bargaining. But the reticence is not surprising. As a Council member I recall that during the prologue to establishing the ITQ program most boat owners were unwilling to give public statements on which allocation formula they preferred because of fear of angering processors on whom they were dependent in the interim. When the SCOQ ITQ program was instituted one of the benefits of the program that was used as a selling point was that the future quota holders would be guaranteed a share of the returns from the fishery in perpetuity. That a quota share will have value as a proportion of the TAC over time is an argument that is made during the initial planning for all ITQ programs in the world, including the SCOQ program. I know this because I was around for the planning of many of the early ITQs and I was personally engaged in the development of the SCOQ ITQ program.

One of the reasons why there are so few statements on the true nature of the market for quota shares in the SCOQ fishery is that it is so difficult to do a detailed study of the market especially at the level taken in the Compass Lexicon and Northern Economics reports, as oftentimes much of the necessary data are not collected or are withheld by the industry or government as business confidential. While working on this report I had several conversations with eminent faculty members about why it is that the SCOQ ITQ program is the only one in the world that does not take the entire TAC and how the market for quota shares actually works given the three special conditions discussed above. Notwithstanding the challenges mentioned, there may be a detailed and careful doctoral dissertation on this subject from a resource economics program in a major University in the near future.

Returning to Figure A, it should be clear from the above that the distance between TAC and q^* represents the amount of annual quota that is not sold and remains unused. Call the owners of this unused quota Group X. Given the confidentiality of the data it is hard to identify them and the size of the group may increase or decrease in size with changes in market output. And it should also be clear that processors have to buy some quota shares in order to produce q^*, the market level of output. However, the fact that industry tells us that millions of dollars have been paid over the year to rent tags does not prove that there is no oligopsony power. The point is they bought some but they did not have to buy them all and they got to choose who they bought from. They have and continue to work in a buyers market.

Sproul takes issue with the statement in SSC report that the very existence of non-participants who can't sell their quota is evidence of monopsony (oligopsony) power in the quota market. He says it is not supported by any of the expert review documents or by economic theory or the facts of the SCOQ fishery. In particular he says that

> "The observation of unused quota is consistent with either a) excess TAC relative to what can be harvested profitably, or b) market power of processors reducing the total volume in the clam market below TAC (that would otherwise be fully harvested). The second one would oligopsony power over harvests*. By itself, unused quota offers no conclusive evidence for either case.* I will show that in what follows that the other available evidence suggests excess TAC explains the unused quota, rather than market power of processors. "

Consider the sentence in quotes. "By itself, unused quota offers no conclusive evidence for either case." As it stands, the "by itself" term makes the sentence correct. However, the quote must be considered in the context of the SSC report which was talking in terms of the three unique elements of the SCOQ fishery. In addition to the unused quota there is the fact that clams must be processed before sale and there are a limited number of processors in the market. The analysis of Figure A, which shows the correct economic theory and facts of the SCOQ fishery show that the statement in question from the SSC report is accurate. Perhaps it would have been better to state something like "Given the other two unique elements of the SCOQ fishery, the existence of unused quota is evidence of oligopsony power.

For a closer look at how the industry strives to maintain its olopsony power, consider the comments on the vote on the cost recovery amendment during the 2015 February Council meeting. According to the Magnuson Stevens Act all ITQ programs must be subject to a cost recovery fee where the costs directly attributable to the ITQ programs is paid by ITQ holders.

During the discussion of the cost recovery amendment the industry ignored the plain fact that cost recovery is mandated and argued in favor of no cost recovery (Alternative 1) but as a backup they supported an alternative that would have all ITQ owners, including the non-participating owners (Group X), be assessed a cost recovery fee (Alternative 4).

> "Should the Council not decide on Alternative 1, then our clients would be forced to support Alternative 4. That is the only alternative that distributes the costs fairly to everyone and is the most economically efficient because it would require the least administrative effort to collect the fees. Additionally, Alternative 4 is the fairest proposal because it ensure that all who benefit for the ITQ program pay for a share of its administrative expense."

Letter from D. Wallace to Chris Moore dated January 16, 2015 and included in the documents from the February 2015 Council meeting.

> "Further, Alternative 4 is the fairest proposal because it ensures that all who benefit from the ITQ program pay for a share of its administrative expense. Those who do not actually use their tags to harvest shellstock in a given year still benefit substantially from having the ITQ program in place. It gives value to the shares that they own, and predictability regarding how those shares may be treated through transfers and otherwise. "

Letter from T. Alspach to Chris Moore dated January 14, 2015 and included in the documents from the February 2015 Council meeting

To be clear, they are arguing that the fairest thing to do is to have Group X tag owners, those who are not able to sell their tags due to the oligopsony power of the processors, pay the cost recovery fees despite the fact that they do not benefit from the ITQ program.

It is useful to ask why the processors argued for sharing cost recovery over all tag holders when the actual dollar amounts are so very small relative to their operating costs. However, the net returns of Group X participants would have been significantly affected if they were forced to pay the cost recovery fee for tags that they were not able to use. Their quota shares, (an asset that was supposed to give them a share of the gains from the ITQ program, but instead has a zero value because of their inability to sell them,) would turn into an asset with a negative value. The outcome would have placed Group X in a position where they would have no choice but to sell their quota, a theme similar to that suggested by the anonymous commenter quoted above.

For the record the Council did not accept the industry's notion of fairness and voted 20 to 0 for an alternative that only assessed a cost recovery fee to those ITQ shares that were used during the fishing year.

Sproul also suggests market power is not an issue because if it were quota holders could enter the processing sector and compete with existing sector participants. In his comments on page 7 he states:

> As I understand it, these non-participants collectively, and the largest one individually, have enough quota to start their own processing facility. If processors were artificially restricting either harvests or the production of shucked clams, these quota holders could immediately step in and compete with sufficient scale.

I would be more comfortable with the view that the risk of setting up a high cost and specialized processing plant, given the technology, capital, siting and permitting required, and especially given the uncertainty of what the existing processors would do, is a significant barrier to entry that would prevent "immediate" or even eventual entry of new processing facilities.

Let us now consider the likely effects of Alternatives 5 and 6, which is something that Sproul did not do.

The excessive shares amendment is being offered to address excessive shares without regard to how they came about. But it is clear from the above analysis that there is and there has been oligopsony in the market for quota shares. And over time, this power has negatively affected the individuals in Group X, those that were not able to sell or otherwise use their annually allocated tags.

Why are they in that group? It is hard to say. Perhaps they did not own or have direct access to processing. Or they did not do well in the initial bidding wars for the sale of tags.

What about alternatives 5 and 6? The basics are that there would be two types of tags: Type A and Type B. In terms of the Sproul analysis above, the amount of Type A shares will be equal to x^* in Figure A, which is the current level of output, and the amount of Type B shares will equal TAC – x^*, and no type B shares can be used until all Type A share are used.

By way of definition, let $\alpha = q^*/TAC$, the ratio of current harvest to TAC. See column 2 in the above tables. If the total amount of Type A quota is equal to q^* (the total amount produced as shown in Figure A,) then the amount of Type A quota current producers will get is shown by the line labeled αq^*. From the table above, this means using the 2017 data, the current producers would get Type A quota that would allow them to have 64% of what they harvested before.

Consider Figure A again. The line labeled $\alpha\ q^*$ represents the amount of Type A quota that will available to the current producers. The value of the marginal tag under these circumstances will be determined

by the intersection of the demand curve and the line demarking the αq^* level of output. In order to produce the same level of output as before, the current producers will need to purchase the rest of the Type A quota from Group X. The final price for the extra tags needed will again be determined by bargaining between processors and tag holders, but things will have changed because the processor will have to buy all (or nearly all) of the Type A tags in order to meet the market output. The oligopsony power will have been reduced. The regulation will bring Group X back to the table in terms of capturing the rents from the fisheries. It is also possible that others who were able to sell tags before will be able to get higher prices for their tags if they are not under long-term contracts.

This could involve considerable extra payments by the processing companies, which is why they are so opposed to these alternatives.

However, the choice is a pure policy call that depends on how one evaluates the distribution effects. The law demands that market power in ITQ fisheries be addressed, but nothing has been done for over two decades. The processing sector has been able to set up a situation where they are doing rather well but at the expense of individuals in Group X. Alternatives 5 and 6 will turn things around to provide a more level playing field at the expense of the processing sector but to the advantage of the folks that have suffered losses for a very long time. Some say that the processing industry has just played the cards they were dealt very carefully and it is too late to do anything now. Others say processors have been dealing off the bottom of the deck using their oligopsony powers for many years (which is clearly forbidden by the Magnusson Stevens Act) and it is time to put a stop to it.

The processing industry has muddied the waters by calling alternatives 5 and 6 “social engineering”, (to say nothing about despairingly insulting the hard-working members of the FMAT) but it is clear that the alternatives were specifically designed to directly address the oligopsonistic powers. And the Type B quota will allow for instantaneous production expansion should new markets develop. No regulatory action would be necessary

One final point bears consideration. The argument that that the “excess TAC relative to what can be harvested profitably” explains why there is unused quota shares (but is only part of the story with respect to oligopsonistic market power) is interesting. This is a point that is stressed repeatedly in comments by the processors and their consultants. However, it is surprising that no one takes the next step and considers its effect on the need for basic fisheries management. One of the basic tenets of fisheries management is that left to their own devices, profit motivated fishermen will tend to harvest *more* than the safe annual harvest if the market will accept that much output. *This is the fundamental justification for controls on harvest in modern fisheries management.* But given that the TACs in the SCOQ fisheries are less than the ABC values, they most certainly represent safe annual harvests. Therefore, the fact that there is “excess TAC relative to what can be harvested profitably” indicates that there is no need to set harvest limits on these fisheries, much less implement a complicated ITQ system. Apparently try as they might, for the last 10 years the SCOQ fisheries have not been able to sell enough product to even match the TACs which are well below safe levels of catch Thus, the need to continue to manage the SCOQ ITQ fishery in its present form with all its coincident scientific and regulatory costs and implications is a public policy issue that warrants serious Council and NOAA evaluation.

Congress of the United States
Washington, DC 20515

November 22, 2019

Dr. Christopher Moore
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 19901

RE: SCOQ Excessive Shares Amendment Comments

Dear Executive Director Moore:

We are writing in regard to the Mid-Atlantic Fishery Management Council's (Council) efforts to regulate the acquisition of "excessive shares" of Individual Transferable Quota ("ITQ") fishing privileges in the federal Atlantic Surfclam and Ocean Quahog (SCOQ) fishery. This effort is intended to bring the SCOQ Fishery Management Plan into compliance with the Magnuson-Stevens Fishery Conservation and Management Act, and we understand that the Council has been working to scope and develop potential methods to limit excessive share accumulation since 2017. As part of this process, we recognize that Council members and staff have engaged regularly with SCOQ harvesters, processors, and the public to guide the development of the Public Hearing Document released for public comment from August 1 – September 14, 2019. It is our expectation that the Council will use this feedback to inform its selection of an approach to limit excessive share accumulation at its December 2019 Council meeting. As the Council reviews comments on the Public Hearing Document, we wanted to elevate the concerns of Sea Watch International – an important business in our state – regarding two of the proposed approaches. We ask that our letter be included as part of the written comments made on the Public Hearing Document.

As you may know, Sea Watch International was founded in Milford, Delaware in 1978 and remains an important part of Delaware's coastal economy. The company's Milford processing plant employs nearly 300 people and produces many of the clam products that Delaware residents and visitors enjoy. We hope the company can continue to help cultivate and grow the domestic Atlantic clam market in Delaware and throughout the East Coast for many years to come. We would like to bring both substantive and procedural concerns raised by Sea Watch International about the Public Hearing Document to your attention.

Substantively, of the six excessive shares cap schemes outlined in the Public Hearing Document, Sea Watch International has expressed serious concern that Alternatives 5 and 6 would have severe economic ramifications for the domestic Atlantic clam market. Both of these approaches would create new, two-tiered systems with shares divided between "Class A" and "Class B" shares industry-wide. Although an entity's entitlement to its ITQ shares has, for the past 30 years, been calculated as its percentage of the total surfclam or ocean quahog quota, both proposed approaches would require "Class A" shares to be calculated as a percentage of the annual harvest. Each would

also require "Class B" shares to comprise the remainder of what an ITQ owner's additional shares would be if calculated, as in the past, as a percentage of the full quota. Under these proposals, none of an ITQ owner's "Class B" shares could be accessed or utilized, however, until and unless all "Class A" shares of all ITQ owners were fully leased or utilized.

As the country's largest harvester and processor of clams, Sea Watch International is deeply concerned about the economic ramifications of these proposals. According to the company's calculations, implementation of Alternatives 5 or 6 would effectively confiscate as much as 40% of the current shares from active industry participants and force them to pay for the lease of ITQ privileges from inactive ITQ speculators at whatever price those speculators can extract. This could raise the cost of producing domestic clams and, in turn, affect hundreds of jobs in the industry.

As a procedural matter, Sea Watch International has also shared their concerns with us regarding the Council's handling of the Public Hearing Document. It is our understanding that the Public Hearing Document for the SCOQ Excessive Shares Document was approved by the full Council at the June 2019 Council Meeting. However, by the time the document was released for public comment on August 1, 2019, Sea Watch International and other industry members noted that substantial staff-level edits and additions had been made to the document. According to Sea Watch International, these changes apparently did not go back before the full Council for approval. Sea Watch International has informed us that other industry members submitted a "Request for correction of information submitted under section 515 under Public Law 106-554" detailing these edits. The company has expressed concern to us that these changes exceed the technical or clarifying edits typically made by Council staff in the interim between Council approval of a Public Hearing Document and the start of the public comment period. Therefore, we ask that you provide us with any additional information that may help us better understand the changes made to the Public Hearing Document between the Council's June 2019 approval of the finalized document and the August 1, 2019 issuance of the Public Hearing Document for public comment.

Given its importance to our state, we ask that the Council give full and fair consideration to Sea Watch International's concerns in selecting a measure to limit excessive shares accumulation in the SCOQ fishery. Further, we understand that Sea Watch International and other industry members have expressed their willingness to collaborate with the Council on this matter by developing a proposal (a modified version of Sub-Alternative 4.3) that satisfies the Council's goals and balances industry's concerns. We ask that you consider this good-faith effort when weighing your options and ultimately selecting your preferred proposal.

We appreciate your consideration and respectfully request that you keep us apprised of your decision following the December Council Meeting. If you have any questions, please feel free to contact Kaitlyn Pritchard (Kaitlyn_Pritchard@epw.senate.gov), Chris Young

(Chris_Young@coons.senate.gov), and Sara Jordan (Sara.Jordan@mail.house.gov).

Sincerely,

Thomas R. Carper
Ranking Member
U.S. Senate Committee on
Environment and Public Works

Christopher A. Coons
United States Senator

Lisa Blunt-Rochester
United States Representative

cc: Michael Luisi, Chairman, MAFMC
Dr. Peter DeFur, Chair, MAFMC SCOQ Committee
Michael Pentony, Regional Administrator, GARFO

JACK REED
RHODE ISLAND

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http://reed.senate.gov

November 27, 2019

Dr. Christopher Moore
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901

Dear Dr. Moore:

I write to share the enclosed letter from Mr. Chris Shriver, General Manager of Galilean Seafood, regarding alternatives 5 and 6, which are under consideration as part of the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment process.

Galilean Seafood employs over 150 people throughout its supply chain, including at its Bristol, Rhode Island facility, and it is an important part of Rhode Island's seafood industry. In the letter, Mr. Shriver indicates that alternatives 5 and 6 would impose additional and potentially unsustainable costs on Galilean Seafoods by forcing it to purchase quota from inactive participants in the fishery before it can access its own quota.

Given the potential impacts on Rhode Island jobs, I ask that you take these concerns into consideration as you evaluate alternatives for this amendment.

Thank you for your attention in this matter.

Sincerely,

Jack Reed
United States Senator

Enclosure
cc: Mr. Chris Oliver, Assistant Administrator for NOAA Fisheries

Galilean Seafoods

16 Broadcommon Road-Bristol, RI 02809
TEL. (401) 253-3030

United States Senator
Jack Reed, Rhode Island
1000 Chapel View Boulevard
Cranston RI, 02920-5602

November 25, 2019

Dear Senator Jack Reed,

My name is Chris Shriver, General Manager Galilean Seafood's Bristol, Rhode Island. Galilean Seafood's' is the largest "Hand Shucked" surf clam operation in New England and has been processing niche market "Hand Shucked" North Atlantic Surf clam for several decades employing over 150 people throughout its supply chain; from harvesting effort, vessel management and maintenance, processing, sales & marketing and distribution. Many of the personnel live locally in Bristol and its surrounding Rhode Island neighboring communities. In addition, Galilean Seafood's distributes its products regionally to processors such as Blount and independent mom & pop restaurants and Clam Shacks such as Flo's.

The nature of this letter to you, Senator Reed, is to bring to your attention a pending action by the Mid Atlantic Fisheries Management Council (MAFMC) on a Surf Clam Ocean Quahog Excessive Shares Amendment that is threatening the healthy sustainable future of the Surf Clam Ocean Quahog Industry and Rhode Island's Galilean Seafood's by considering regulations that negatively impact Individual Transferable Quota (ITQ) fishing privileges in the federal Surf Clam and Ocean Quahog Industry.

Industry has circulated to Senators and Representatives of Surf Clam Ocean Quahog landing and processing states an Industry prepared letter (Attachment) addressed to National Oceanic Atmospheric Administration, Assistant Administrator Chris Oliver stating industry fears with the Excessive Shares Amendment and its inevitable damaging impact on (ITQS) Individual Transferable Quota System. Industry has great concerns regarding some alternatives being considered. For this, we ask for your support of industry against alternatives 5 and 6.

Alternative 5 and 6, specifically would have tremendous negative impacts on our ability to be profitable and stay in business. They are in part designed to increase the leasing activity of quota holders that do not have anyone to lease to. It is implied that the current active participants in the fishery purposefully do not catch all the quota thereby do not need to rent the non-active quota holders tags. This could not be further from the truth.

Alternative 5 and 6 would split the quota in such a way that it would force Galilean Seafood's to lease quota at uncontrolled prices before we could even utilize our own owned quota. Our company has little need to lease quota but these alternatives would cause us to not have utilization of up to 40% of our owned tags and lease quota that of which may not be available because all quota holders will have had the same reduction in available quota. We would then have to shut the doors and put everyone on the unemployment line waiting the market demand to increase to get the B share of our allocation. It is nothing more than social engineering that favors a very small subset of the quota holders while undoubtedly, passing on a negative financial impact to the active participants.

Thank you again for your consideration in support of industry and Galilean Seafood's against against alternatives 5 and 6 in the Surf Clam Ocean Quahog Excessive Shares Amendment.

Best,

Chris Shriver
General Manager

Galilean Seafoods
16 Broadcommon Road
Bristol, RI, 02809
609-602-4889

Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment

Summary of All Comments Received August 1 – September 14, 2019

The following provides a summary of common themes provided in both the written and public hearing comments regarding the Excessive Shares Amendment – Public Hearing Document. Please see the summary of public hearing comments and the complete written comments for additional detail.

Comment Period: August 1 to September 14, 2019

Number of Written Comments Received: 29 comments were received. Some individuals and/or businesses provided multiple comment letters.

Number of Public Hearings:

- Cape May, NJ – Thursday, Aug. 1
- Dover, Delaware (Webinar) – Wednesday, Aug. 7
- Salisbury, MD – Monday, Sept. 9
- Warwick, RI – Tuesday, Sept. 10

Attendance at Hearings: 40 in attendance cumulatively at the 4 hearings (excluding hearing officers and Council Staff); comprised of 29 individuals/people (i.e., some people attended more than 1 hearing). Twenty-seven cumulative oral comments were made at the 4 hearings. Some people provided comments at two or more public hearings.

Goals and Objectives

- Most comments noted that the current goals and objectives should not be change.

- They have worked well for 30 years and have accomplished what they were designed to. Changing the existing Goals stated in the FMP could create potential misinterpretations.

- Bumble Bee Seafoods indicated that they support the Council's efforts to update the goals and objectives of the SCOQ FMP.
    - They stand by the list of revised/rewritten goals and objectives that were submitted in writing to the Council on July 12, 2017.

- Refreshing these goals and objectives to include things like sustainability and science/research would be good.

Excessive Shares Alternatives

- The status quo alternative is not fairly represented in the document. The current system has been in place for 29 years and it works. GARFO is requiring a quantifiable excessive shares cap. This is not required by MSA. There is already an excessive shares definition in place.

- There is insufficient information to support implementing a specific excessive shares cap, or even if one is needed at all.

- The impact analysis of all excessive shares cap alternatives is deficient.

- The purpose and need for action (excessive shares cap) as described in the document is not consistent with MSA and what was implemented under Amendment 8.

- Some people indicated that they would still prefer the no action/status quo alternative (alternative 1) and/or 95% cap under sub-alternative 2.3 (single cap on ownership with unlimited leasing) and/or 49% cap under sub-alternative 2.2 (single cap on ownership with unlimited leasing) and/or 49% cap under sub-alternative 3.3 (combined cap), because of less potential for harmful economic impacts.

- However, the industry is willing to compromise in order to achieve results everyone can live with. The clam industry has operated in good faith and is willing to compromise to accomplish what the MAFMC/NMFS maintain is necessary under National Standard (NS) 4.
  - Compromise expressed by the majority of industry members that provided comments.

- Industry supports sub-alternative 4.3 with minor modifications.
  - Currently, sub-alternative 4.3 includes:
    - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags).
    - The ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%.
  - Industry supports sub-alternative 4.3 with the following modifications to the values in sub-alternative 4.3:
    - For Surfclams: 35% ownership / 65% combined.
    - For Ocean Quahog: 40% ownership / 70% combined.

- One commenter supported sub-alternative 4.3 without modifications.

- Alternatives 5 and 6 will have devastating adverse economic impacts to the industry. They should be deleted from the public hearing document.

- Adverse impacts associated with alternatives 5 and 6 are not adequately described in the document.

- There were no comments submitted that directly supported alternative 5 or alternative 6. However, three commenters indicated that they would like to see the quota match the current landings levels.

- Some major themes regarding opposition to alternatives 5 and 6 were:

    - Alternatives 5 and 6 will give market power to the non-participant ITQ holders.

    - The non-participant ITQ holders do not contribute to the marketing process, infrastructure development, science and technology development, etc. that is needed to keep this industry successful.

    - The SSC report dated 17 May 2019 regarding monopsony power issues (presented to the Council in June 2019) was not peer reviewed and is inaccurate, and should not be included in the public hearing document.

    - Under alternatives 5 and 6, the industry would need to lease more shares from non-participants. Non-participants have not invested capital into the industry and are not taking any risks, nor have they invested in this industry.

    - A major flaw of alternatives 5 and 6, is that there are a couple of allocation holders that currently will not lease out their allocations due to negative feelings towards everyone in the business. This would create a downward spiral effect and make the catch go down.

    - Alternatives 5 and 6 are not designed to address excessive shares but rather as a mechanism for reallocation.

    - Alternatives 5 and 6 micromanage the fishery. Industry do not want to go that route; have been there and it was not good for the industry or management process.

    - Alternatives 5 and 6 are designed around the quota holders that do not have lessors to rent to. This is social engineering so a few leaseholders, that are large leaseholders, can use their quota.

    - Alternatives 5 and 6 are market restructuring plans (social engineering/share reallocation) and not excessive share controls.

    - Reducing everyone's quota (share) forces harvesters and processors to lease quota before all of their owned quota is used. Industry data suggests that the non-sellers/non-participants are highly concentrated – turns them into oligopoly sellers of quota.

    - Alternatives 5 and 6 are in violation of NS5.

- Analysis submitted during the public hearings indicates that there is no monopsony power issues in the clam fisheries.

- Analysis submitted during the public hearings indicates that the two-tier quota system under alternatives 5 and 6 would turn non-participants into oligopoly sellers of their "A shares." Therefore, these alternatives would give market power to those individuals.

- It is not known how many individuals (non-participants) would benefit from alternatives 5 and 6 as there is no information on how many ITQs are not leased. It is likely that alternatives 5 and 6 would benefit a few non-participant allocations holders while harming people currently participating in the fishery.

- Alternatives 5 and 6 will result in a decrease in net leasing activity.

- Alternatives 5 and 6 would reduce the ITQ available for collateral and increase the cost of producing clam products.

- Alternatives 5 and 6 would have negative impacts on jobs by raising processors cost and passing those costs to consumers.

- Alternatives 5 and 6 would result in increased imports of cheap foreign clam products and diminish US product marketability.

- Regarding the model/affiliation levels for selecting/monitoring any excessive shares alternative the Council selects, a few comments indicated support for the following:
  - Net Actual Percentage model.
  - 100% cumulative model.
  - Individual/business affiliation level.
  - Family level affiliation level.

Other Alternatives

- These alternatives were also supported by industry members that offered comments:

  - Excessive Shares Review (Box ES-2) – Alternative 1, No Action.

  - Framework Adjustment Process (Box ES-3) – Alternative 1, No Action.
    - A framework adjustment process does not allow for a full transparency to address changes.
    - Industry can manage the fisheries on their own.

  - Multi-year Management Measures (Box ES-4) – Alternative 2, Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule.

Other Comments

- A request for correction of information under Section 515 of Public Law 106-554 was submitted.
    - It was indicated that the submission was made because there were substantial changes to the public hearing documents between the version that came out of the June Council meeting and the version that was used for public hearings.

- The excessive shares definition should not include social engineering concepts.

- Concerns were raised through a few comments on participation of independent stakeholders in the industry and management process.

- Industry is not catching the quota due to low demand levels, increasing foreign competition, and habitat area closures.

Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment
Public Hearing Summaries (four meetings)
August – September 2019

Thursday, August 1, 2019: Cape May, New Jersey
Hearing Officer: Peter Hughes
MAFMC Staff: José Montañez, Jessica Coakley

Attendees (13): Tom Alspach, Guy Simmons, Jamie Sanyer, Martin Truex (Sea Watch International), Barry Cohen (Atlantic Capes Fisheries), Chris Shriver (Galilean Seafoods, Inc.), Tom Dameron (Surfside Seafoods), Peter Himchak, Michael LaVecchia (LaMonica Fine Foods), David Wallace (Wallace and Associates), Joe Cimino (NJ DEP/Council member), Joshua O'Connor (NMFS), and John Kelliher.

Peter Hughes read the meeting statement to open the meeting. José Montañez gave a presentation on the contents of the amendment. Questions and comments were taken.

Tom Alspach, Sea Watch International

- The status quo alternative is not fairly represented in the document. The current system has worked for 29 years and now, GARFO is requiring a quantifiable excessive shares cap. This is not required by the MSA.
- Sea Watch International is willing to compromise to achieve results everyone can live with.
- We do not support alternatives 5 and 6 because these are not excessive shares proposals. These alternatives would reduce quota to a value that is based on recent years landings (i.e., 30 to 35% reduction in quota). As an example, take an entity that owns/holds 20% of the entire surfclam allocation, that would result in about 680,000 bushels or bu (assuming current quota of 3.4 million bu), but under alternatives 5 and 6, that value would be reduced to 440,000 bu of Quota A shares (20% of 2.2 million bu). So, this entity would have to lease 240,000 bu to maintain the same level of production they currently have [before the Quota B shares are released]. The leasing rate used to be $6/bu, now it is $2-$3/bu. This additional cost will be passed to the consumer. The purpose of alternatives 5 and 6 is not to protect against excessive shares, but to align supply and demand, which amounts to social engineering. It creates a market for "non-participating owners." Instead of selling the ITQs, they held on to them with the intent of leasing them or passing them on to their children. Many of them have nothing to do with the industry. To do this, it arbitrarily reduces the ITQ for those that paid dearly, and requires them to pay again to lease from the non-ITQ owners. This is done only as a mechanism to create an ITQ market for those who don't participate in the market [fishery]. These owners don't attend meetings, participate in the industry, or participate in the fishery. Most of them are hoping we create a windfall for them.

- The SSC comments found in the SSC report dated 17 May 2019 are wrong [Comments on the SCOQ Excessive Shares Amendment presented to Council in June 2019].
- A reasonable compromise alternative would be sub-alternative 4.3 with a slight modification. We suggest the following modifications to the values in sub-alternative 4.3:
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- With this new plan in place and the fact that the antitrust laws will not go away. If people engage in anticompetitive behavior, the antitrust laws would address any anticompetitive behavior.

Guy Simmons, Sea Watch International

- As a result of the implementation of Amendment 8 in 1990, the fishery has experienced a lot of consolidation. Consolidation was one of the FMP objectives.
- This is a highly capitalized business on both land and sea. The industry has made large investments in infrastructure. These investments are the only reason the fishery remains today. These businesses produce jobs, taxes, and support traditional coastal communities.
- Alternatives 5 and 6 are not designed to address excessive shares but rather as a mechanism for reallocation.
- Understanding that the Council has the task of deciding on an excessive shares cap, we propose a modification to sub-alternative 4.3, which would allow for the industry to innovate and grow and create a robust leasing market for ITQs.
- We suggest the following modifications to the values in sub-alternative 4.3:
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- For the following alternatives, we also support:
    - Excessive Shares Review (Box ES-2) – Alternative 1, No Action
    - Framework Adjustment Process (Box ES-3) – Alternative 1, No Action
    - Multi-year Management Measures (Box ES-4) – Alternative 2, Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule
- Alternatives 5 and 6 could have devastating ramifications to Sea Watch International and the whole industry.
- I also support comments made by Tom Alspach regarding the SSC, as well as other comments made by him.

Chris Shriver, Galilean Seafoods, Inc.

- Represents a hauling manufacture, sales, and marketing.
- Concern about some of the alternatives in the document. Particularly, alternatives 5 and 6. These two alternatives imply that the participants do not catch the quota and do not lease from others [non-participants]. We are competing with imports, and these two alternatives do not allow industry to use all the quota. Splitting the quota (Quota A and Quota B shares) is nothing but social engineering that supports a small number of quota holders. These alternatives would diminish the ability to grow.
- We suggest the following modifications to the values in sub-alternative 4.3:
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined

- Thank you for the opportunity to comment.

Michael LaVecchia, LaMonica Fine Foods

- We do not use all of the quota we have because of market demand. If we could, we would land every clam we need to fill all of our ITQ. Our fixed cost drops with every additional clam we catch. In fact, there is clam quota we lease that we do not use, and we throw tags out at the end of the year.
- Sub-alternative 4.3, with some slight modifications, is something that we could work with, without overwhelming each other.
- We suggest the following modifications to the values in sub-alternative 4.3:
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- We think this would be fair and equitable and give a good definition and basis around excessive shares.
- Staff asked if the difference between the surfclam and ocean quahog values was due to the number of ocean quahog processing plants.
    - Response: Yes, only 2 ocean quahog processing plans are operating now.

Barry Cohen, Atlantic Capes Fisheries

- The clam fishery is an extremely dangerous industry. People are not only seeking to make a profit but also undertaking substantial risk. Both in treasure and risk to life.
- We are profoundly impacted by habitat [actions] up in RI [Great South Channel Habitat Management Area], but if we are not catching what we want, it is because the major source of our surfclams has been removed by habitat closures.
- We are in a business that is highly capitalized, has a whole lot of risk, and is underproducing because we can't catch what we need to catch.
- Under alternatives 5 and 6, we would need to lease more shares from non-participants that do not have capital invested in the industry and are not taking any risks.
- The industry has shrunk, not because it is successful, but because there is so much foreign competition. Alternatives 5 and 6 will create additional stress in this industry.
- There has not been a concerted study of why these ITQ holders [non-participants] are not participating in the fishery.
- We can live with sub-alternative 4.3 with some modifications, at the same levels previously indicated earlier by other individuals.

Peter Himchak, LaMonica Fine Foods

- Not going to differ with the comments provided by Michael LaVecchia.
- In addition, support the additional following alternatives:
    - Excessive Shares Review (Box ES-2) – Alternative 1, No Action
    - Framework Adjustment Process (Box ES-3) – Alternative 1, No Action
    - Multi-year Management Measures (Box ES-4) – Alternative 2, Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule
- I want to provide a different perspective on how I view this amendment. In 40 years in state marine fisheries, I was involved in quota-based systems for fisheries, gears, capping licenses, etc., and all of these were based on limited entry and there were winners and losers. The upshot of this was that they did get a piece of the fishery and were defined as small businesses. Now what they did with their permits and practices, was their problem so we would never reconsider eligibility. You don't reshuffle the

cards. Alternatives 5 and 6 redo the system and provide non-participants with an advantage, if these non-participants are deprived it's their own fault. So why should the current participants have to pay for the non-participants. Alternatives 5 ad 6 need to go.

John Kelliher, Surfside Industries

- Alternatives 5 and 6 would kill our business. We lease a great deal of clams.
- I agree with the comments provided by others.

David Wallace, Wallace and Associates

- As an industry, we vehemently oppose changing the goals of objectives of the plan. When these new goals and objectives were being developed, we unanimously objected to them as an industry throughout the process.
- The new objectives have all kinds of new ideas that could be pursued as a joint venture with the NEFMC. The NEFMC put the small boats in the fishery out of business to protect buried rocks. The ideas that we are going to snuggle up with NEFMC is preposterous.
- All of these alternatives [in the public hearing document] are social engineering. The [stated] impacts of these alternatives are wrong; they should be reversed. The management system that we have is the best, it is extremely flexible, and does not allow the Council and NMFS to come in with all kinds of silly ideas and micromanage this fishery.
- Gorton's of Gloucester, Mid-Atlantic Foods, Doxy, American Original – are all examples of large unprofitable companies with shareholders that demanded high margins, so they left the industry in recent years. And Eastern Shore Seafood, which lost lots of money finally found someone to buy them out and left the industry with huge losses.
- The Council now is talking about getting back to micromanaging this industry. We remember when the government tried to micromanage the fishery and it was a disaster.
- There is not a monopoly problem in the fisheries, but there is a surplus and it is a good time to get into the fishery. All you have to do is figure out how to sell clams.
- More management structure from the federal government that has no clue of how this industry works is not the answer, and when one thing gets out of kilter, everything gets out of kilter.
- Alternatives 5 and 6 have a fatal flaw. There are a couple of allocation holders that currently will not lease out their allocations. This is due to negative feelings towards everyone in the business. If it was up to them, they would find a way to mess up this industry and make the catch go down. If the catch goes down, then you have a death spiral as Quota A shares are based on recent landings. Some people don't understand this and think this is just a fairy tale. This could substantially increase production cost and we cannot pass that along to the large byers. A few years back we tried to raise the prices and the large buyers said that they would emphasize clams and use clams from other countries (like Clearwater from Canada that has a monopoly) to drive the price down [and hurt the industry]. We will not be in business if the NMFS and the Council decide they know best and micromanage the fishery. These poor people [non-participant ITQ holders] make millions and haven't missed a meal because of this.

- In the affiliate categories, including the corporate officers, you have indicated that all the data aren't even there. If we don't have good data, we can't base this on it, and what we have is false.
- The review alternatives in the document [Excessive Shares Review and Framework Adjustment Process] are not desirable either as these reviews would come from the FMAT. The FMAT is a closed society, including you [Council staff] and NMFS and others. In the past, we wrote management plans, currently we did not write a word in this document.

Wednesday, August 7, 2019: Webinar
Hearing Officer: Stewart Michels
MAFMC Staff: José Montañez, Jessica Coakley
Attendees (7): Tom Alspach, Guy Simmons (Sea Watch International), Peter Himchak (LaMonica Fine Foods), Sam Martin (Atlantic Capes Fisheries, Galilean Seafoods, Inc.), Dave Wallace, Tom Hoff (Wallace and Associates), Ann M.

Stewart Michels read the meeting statement to open the meeting. José Montañez gave a presentation on the contents of the amendment. Questions and comments were taken.

David Wallace, Wallace and Associates
- As I said in Cape May, I do not believe the goals and objectives needs to be changed. They have been effective for 30 years. The industry has been managed well under those goals and objectives.
- Regarding objective 2.2 "Objective 2.2: Promote coordination with the New England Fishery Management Council" under objective 2 "Maintain a simple and efficient management regime;" we do not think that the NEFMC should be a partner of the MAFMC. The NEFMC shut down the small clam fishery in Nantucket Shoals because they wanted to protect buried rocks. The MAFMC was not supportive of our request to keep the area open to clam dredges. We are disappointed that the MAFMC did not put its foot down and help the clam industry. No one at the MAFMC was willing to help the industry. They [NEFMC] needed to have a substitute for not closing areas for scallopers – there were only clams on Nantucket Shoals so they chose to stick it to the clam industry. So, to include the NEFMC as a partner is not a good idea – with friends like these who needs enemies.
- All the key companies, as requested, have come up with an excessive shares alternative that we support. Which is not alternatives 5 and 6. We support sub-alternative 4.3 with the following modifications:
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- Everyone at the Cape May public hearing meeting indicated that they supported sub-alternative 4.3 with these modifications and we think that this is fair and reasonable. It meets the Compass Lexecon suggestion of a two-part cap. It also meets the 40/40/20 requirements. The industry does not advocate for any of the other excessive shares cap alternatives or sub-alternatives.

Tom Hoff, Wallace and Associates
- From what I understand, the industry is fully united and supports sub-alternative 4.3 with the following modifications:
    - For Surfclams: 35% ownership / 65% combined

    - For Ocean Quahog: 40% ownership / 70% combined
- As you know, I was the Council staff 15 years ago when the excessive shares issue started, and the only things the industry was united on was the no action as this was adequately covered under antitrust laws. The fact that the industry is united supporting sub-alternative 4.3 as stated above is a once in 15 year opportunity. The Council should seriously consider this sub-alternative.
- The goals and objectives were developed 30 years ago – the Council and government have been operating effectively under those for many years. I caution the staff and the Council not to change a word – there could be potential misinterpretation.
- Regarding the Framework Adjustment Process (Box ES-3) – I support Alternative 1, No Action. In no way should this be frameworkable – this took 15 years of a drawn out battle. To think 2 meetings would be adequate to make changes is not advisable. We should go through the full FMP process [Amendment] to make any changes.

Sam Martin, Atlantic Capes Fisheries

- Representing 6 vessels and Atlantic Capes Fisheries.
- We are involved in complex fisheries and complex marketing. We need flexibility and the ability to consolidate, to create the synergy that we may need within our business operations.
- Agree with the recommendations made by industry regarding sub-alternative 4.3 with the proposed adjustments.
- Alternatives 5 and 6 seem to be designed around the quota holders that don't have lessors to rent to. Furthermore, there are some quota holders that are used to lease 100% of their quota out – under alternatives 5 and 6, they will not be able to lease 100% of their quota out if the market does not allow the industry to catch over the A shares [if B Quota shares are not released]. These alternative would have grave impacts from a market perspective and a leasing perspective. This is social engineering, so a few leaseholders, that are large leaseholders, can use their quota. This will appease the few to the detriment of the many.

Peter Himchak, LaMonica Fine Foods and Associates

- I am repeating the comments from the Cape May meeting for Stew to ponder, as a state agency representative on the Council.
- I support the alternatives proposed by industry.
- I was with the NJ marine fisheries for 39 years. We put in limited entry systems/programs for many fisheries and gear types. Everyone got a "piece of the action" as the SSC referred to. They were defined as small business owners, but at no time did a state agency revisit any limited entry program to advantage or disadvantage any aspects of those limited access programs. Alternatives 5 and 6 try to address the systematic disadvantage of non-participating quota holders; but you got a "piece of the action," so deal with it with your business skills.

Guy Simmons, Sea Watch International

- I would like to accentuate some of my comments that were made at the Cape May meeting that active participants, that own ITQ, actually harvest clams, market clam products, and contribute to the cooperative science and to draw contrast to the absentee owners that do none of these. Active participants support jobs, payroll, taxes, and maintain investments and infrastructure.
- We support sub-alternative 4.3 with the following minimal changes:

    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- As it relates to alternatives 5 and 6, and I know we are harping on those, but I can't help but think that the people who consider these are not fully aware of the impact that lease costs can have to a finished product. These alternatives will result in prices being raised on the consumer. The lack of advertising has dramatically reduced the price of our products. The price increase allows for low quality, lower priced imports.
- Millions of dollars of clams are imported into the US each year. When demand goes down, the need for employment goes down. I'd like to draw contrast between Sea Watch International and absentee owners. Sea Watch International and TMT clam companies employ hundreds of people (896 during peak production season and that can fluctuate as much as 30%).
- Alternatives 5 and 6 reduces everyone's quota including the "absentee participants" and force harvesters and processors to lease quota before all of their quota is used. This would raise prices to producers and consequently to consumers. When domestic prices get too high, the cheaper imports have the opportunity to gain market share in the US. In 2018, $79 million worth of clams were imported into the US. This could result in a reduction in employment. At the risk of being redundant, I would like to restate our support of the following measures.
- Sea Watch International would support Sub Alternative 4.3 with a slight modification.
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- Sea Watch International would also support:
    - Excessive Shares Review (Box ES-2) – Alternative 1, No Action
    - Framework Adjustment Process (Box ES-3) – Alternative 1, No Action
    - Multi-year Management Measures (Box ES-4) – Alternative 2, Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule
- Thank you for the opportunity to provide comments. My comments will be provided in written form as well.

Tom Alspach, Sea Watch International

- I gave some extensive comments at the public hearing last week. So, I am not going to repeat those again. Maybe Stew is sorry he did not get to hear them, maybe he is not. But they are on the record. I will not go thru them again.
- But I do want to emphasize a few things, and ask for some clarity on a number of points. If not tonight, perhaps as we move along the process. In the discussion of the percentage of leasing that should be allowed – nowhere in this report is the issue made between short-term leasing (i.e., less than a year) versus long-term leasing (i.e., more than a year). The Compass Lexecon report indicated that long-term leases could let someone exercise market power. But a short-term lease did not give you enough time to affect the market. So, whatever you come up with at the end in terms of a proposed rule, it should exempt short-term leases.
- I made my comments already in support of sub-alternative 4.3 with some modifications.
- I also provided comments regarding alternatives 5 and 6 and their potential devastating impact on the industry if implemented. So, I want to expand on my comments about alternative 5 and 6. One of the things that has troubled me in the public hearing draft is in the effort that has been made to make them sound appealing.

One thing is when the ITQ amount is based on the average landings for the previous years and not the ITQ quota. This would force us to lease more ITQ from other non-participants; simply, in order for us to maintain the same level of production that we have been maintaining in the past. And one of the repeated rationales for doing this is that alternatives 5 and 6 address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand, and this may result in more activity in the in the leasing market. This is repeated over and over again. This doesn't make any sense, the supply in the industry is already aligned with market demand. We are supplied with the amount of clams we need to support the market; that is the amount of clams demanded by the market. Fortunately, we have enough resource to meet that demand. The number of ITQs that are used is what the market is demanding. It is already aligned.

- This is a phony rationale for alternative 5 and 6 and it doesn't make any sense. It is held out as a benefit. What this does is create a market for those who don't currently have a market, so they have as the SSC put it "a piece of the action." What it appears, while not kindly admitted, is to create a market for lessors that currently do not have a market for their ITQs by reducing the market of ITQs held by active participants.
- This notion that these non-participants are unable to lease their shares is untrue. Our company could not meet the demand it needed (both surfclams and ocean quahogs) with just what ITQs the company controls. We have had to lease surfclam ITQ (200,000 to 300,000 surfclam bu per year) for many years from those who do nothing (non-participants) – so the idea that the active are not leasing from the non-participants is untrue. We also had to lease for years about 700,000+ bu of ocean quahogs in order to supply our customer's needs.
- It is a shame that the SSC claimed that this is going on, and put this information in their documents.
- If for argument sake, which by the way is not true, you claim that there is monopsony power exerted by ITQ holders (participants), by limiting the shares, now you are forcing them to lease from non-participants (to maintain recent production levels). You are now transferring monopsony power to them. What are you doing to protect us (participants) from these non-participants that will gouge us and charge prices that are too high?
- We will be forced to stop producing because it is not affordable. Or, lease and try to pass the cost to the consumers who will resist the high prices. We have been down this road in the early 2000s, and we were not able to pass [costs] along to the consumers for the high lease prices that we have paid in the past. This is not discussed in the document.
- Another thing that has been described in previous opportunities as a detriment, an antisocial benefit, is that these guys that we are leasing from are all multi-millionaires which could get back into the industry if they wanted to but it is much easier to sit on the couch and get a check and not have to do anything.
- The sad part is that those of us in the industry have been contributing with money to new science, participating in the surveys and stock assessments, participating with the New England Council in the habitat discussions. More recently we have been putting money into trying to control where these wind farms will go. We spent millions of dollars to get Georges bank open to relieve fishing pressure from the mid-Atlantic area. We have done all of these through our own dollars. These non-participating ITQ owners have not paid a penny to any of that work effort; nor they have any intention to do that ever. So, under alternatives 5 and 6 you will take money away from us

because you will reduce our ITQ, which is going to reduce the funds that we have available to put into these scientific programs and projects that benefit everyone. So, the science money will go to paying the man on the couch to lease ITQs. Those kinds of social detriments of 5 and 6 are not found in the public hearing documents. And these are among the many reasons alternatives 5 and 6 should be rejected.

- I will be submitting comments in writing as well. I feel very strongly about the comments I just made and hope that the Council considers them when they are forced to make decisions about alternatives 5 and 6.
- Staff made two comments to address some of the statements made by Mr. Alspach. First, when the data collection protocol was being developed, one of the data elements that were proposed to be collected was detailed information on long-term leasing arrangements (e.g., how long were the leasing arrangements for). And at those early meetings, industry members indicated that they would not provide this data as it was confidential/proprietary. So, we can only work with the information that we have. The second issue under alternatives 5 and 6 is that the FMAT did a good job describing the positive and negative benefits of alternatives 5 and 6. In fact, we added information about potential negative impacts that the industry had identified and provided during the June Council meeting.
- Mr. Alspach commented that the FMAT added information about the potential negative impacts of alternatives 5 and 6 in the document, and that he was just trying to add substantive information about impacts that may have not been considered yet.

Sam Martin, Galilean Seafoods, Inc.

- I just thought about an additional comment regarding alternative 5 and 6.
- I represent a company that has about 125 employees as a major contributor in Bristol, RI.
- Our quota and what we use to harvest clams is almost 100% owned – we only lease a small percent (less than 10%). If alternative 5 or 6 are implemented we could have a reduction in quota of up to 30%. Because the ITQ quota could be reduced by 30% (Quota A shares), then the ITQ quota for all would be reduced (ITQ participants and non-participants). As such, since non-participant ITQ holders have already made leasing arrangements (ITQ leases are spoken for), when our company hits the level of production that we are accustomed (say mid-July), our company would not be able to lease additional quota as long as all Quota A shares are not completely used or exhausted. Our company may have no quota to lease, and quite frankly could close our doors for three-four months at a time, which would drive us out of business. The impacts of alternatives 5 and 6 have not been fully vetted with each company in mind.
- We have not identified how many bushels don't get leased each year – therefore, you can't really put an economic analysis on what will happen if alternatives 5 and 6 are implemented.
- When the quota is reduced when A shares are released, the whole quota will go down, and the leasing of ITQ shares will be up for grabs. Those who aren't used to leasing in this market will lose out, and have to shut our doors, and put 125 people out of work.

Monday, September 9, 2019: Salisbury, MD
Hearing Officer: Sonny Gwin
MAFMC Staff: José Montañez, Jessica Coakley

Attendees (12): Jeff Pike (Bumble Bee Seafoods), Guy Simmons, Jerry Gordon, Bob Brennan, Joe Mayers (Sea Watch International), John Martin (Martin Fish Company), Phil Twilley (City of South Port Inc), Sam Martin (Atlantic Capes Inc), David Frulla (Kelly Drye & Wareen LLP), Mike Garvilla (My Holding), Dave Wallace (Wallace and Associates), Steve Martin (Woodrow Laurence Inc).

Sonny Gwin read the meeting statement to open the meeting. José Montañez gave a presentation on the contents of the amendment. Questions and comments were taken.

- Sam Martin (Atlantic Capes Inc), I have a question about alternative 5, regarding Quota A and B shares. What does it mean that this would start in year 4 [Box 5.1.5 of the public hearing document]? Staff response: You would be taking the 3 prior years to come up with the average, for Quota A shares. So, if you were to implement this system in 2020 for example, you would need to use landings from 2017, 2018, and 2019 to come up with the Quota A share value for 2020. It doesn't have to be the average landings for the last 3 years. It could be the 3 year average of the highest values of the last 5 years, or other approaches identified by the Council.
- Jeff Pike (Bumble Bee Seafoods), I have a question. In that example, what percentage of the Quota A shares are not used, are not active participants right now? Because we need to use all Quota A shares before B shares are released. Staff response: We don't have Quota A shares implemented now. Now what we have is the breakdown of shares that are transferred, the number of cage tags that were unused, etc. But it may not all be in one table. These are the numbers we gave to the Council meeting in June.
- Sam Martin, follow-up question: In order to assess the efficacy of alternatives 5 and 6, which would increase the ability of those which have not been able to lease, what percentage of the overall quota is that? That has been unleasable? Which means, people that are receiving the quota and they cannot lease it (i.e., what percentage of the quota is unleasable?). There are companies that lease quota that do not use all and some of these leased tags are discarded at the end of the year. So, what is the true additional activity in the leasing market that would occur as a result of alternatives 5 and 6? This is a big question. Staff response: The values that we have are on page 108-109, it breaks down some of this but it does track it at the individual level. It gets to the number of allocation holders using their tags, of those allocation holders using their tags, 64% of surfclams and 59% of ocean quahogs tags were used. So, this says that you either owned or transferred tags to your entity and of those 64%/59% were used. But it does not break it down by own/leasing independently. To do that APSD would have to track every individual tag record to get that number. The main objective of alternatives 5 and 6 are to set excessive cap values for these fisheries and not to increase activity in the leasing market. We are talking specifically about leasing, but what we actually have in terms of our data for tracking is transfers. So, in some cases, folks have indicated when they do their transfers if they are a short-term lease or a long-term lease. But most of that information is not provided on the forms. So, we do not know what those lease values are. For example, we can clearly see when a banking institution receives tags at the beginning of the year (that is holding tags as a collateral) and those are transferred to the "allocation owner" but a lot of those transfers that occur throughout the year are likely to be impossible to disentangle from transfers that occur between affiliate business and LLCs, because there are holding companies that hold allocations under vessels, separate holding companies or entities or other affiliated businesses/entities, so we know that there are

a lot of transfers that occur within a company, and within the data we can see when you move tags from X to Y, but there is no way to disentangle all details when transferring/leasing. Sam Martin, I agree with you that you have done all you can with the data you have and you cannot get an answer to the question I have because the data is not there, but this is still a very important question, because this is a large driver of what alternatives 5 and 6 are trying to do for a minority percentage of the industry, while adversely impacting the majority of the industry.

John Martin, Martin Fish Company

- I manage a fish company that offloads products and has dealt with clams and quahogs over the years. We recommend giving the largest percentage possible as it will give maximum flexibility. We oppose alternatives 5 and 6. We recommend sub-alternative 4.3 – as written in the document [with no modifications].

David Wallace, Wallace and Associates

- At the Cape May meeting, every major company was represented there. They all agreed to 4.3 as modified for surfclam and ocean quahogs:
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- These recommended values are in compliance with the Compass Lexecon and the CIE report.
- We could recommend the no action/status quo alternative, or 95% (sub-alternative 2.3) or the highest number in the CIE report which was 83%. However, all the companies actually stepped up and recommended the values as modified so that is what we are proposing. Other groups may have a different view, and we will hear from some of them. But the 4 clam companies that I represent collectively are determined to make a compromise.
- All the framework adjustments are not needed – we can manage the industry ourselves and want to tell the clam industry how to run. We are flexible and can manage ourselves.
- We strongly support the current goals and objectives – the current ones have served us well for 30 years and will continue to serve us well.
- Ownership cap should be based on the individuals and families, and should be based on the actual percentage [not cumulative 100% model]. Not interested in playing Russian roulette since they don't have the data.
- We have a whole bunch of issues with 2 public hearing documents – it should be called a social engineering document and you will be hearing a lot more about this. There were a lot of individuals who used a lot of capital and bought quota. The others got the quota for free, but those still in the business had to go buy or lease quota. You are going to make them pay for this twice.
- Staff asked if the recommendation was alternative 4.3 with minor modifications? Response: Yes. Staff asked if the recommended affiliation level was "Family Level?" Response: Yes. Staff also indicated that there is data to assess the cumulative 100% model.

Joe Myers, Sea Watch International

- My name is Joseph Myers. I am the director for Marine Innovation and Technology for Sea Watch International. The comments I am making tonight are supplemental to

the written comments that will be submitted - more detail will be provided in the written comments.

- Key points, alternative 5 and 6 go beyond what is stated to be required by the Council. These go beyond the stated core purpose and are considered solely for economic purpose. These measures are in violation of National Standard (NS) 5.The economic conditions that alternatives 5 and 6 are attempting to address are at best hypothetical and are based on theory and purposes that are incorrect. My interpretation of the consensus reached is that clams are indeed price elastic and that these are met by greater substitutes in terms of imports that have been mentioned. They are competing with other indirect proteins. With increasing substitution, these tend to become more price elastic over time. Demand will decay with greater elasticity over time, and given any limit has a long-term impact. Therefore, attempts to increase prices on the side of suppliers are met in the marketplace with a greater decrease in demand. This is due to the greater availability of substitutes, including other marine and terrestrial protein sources that can be used as a substitute for clams. Alternative 5 and 6 include those who chose not to be active in the fishery, and would impact those who have remain engaged in the fishery and chose to engage in fishing, market development, and support research, etc. The investments that have been made by active participants are substantial. Non-participants have not invested in the fishery and yet these alternatives would benefit non-participants and hurt active participants.
- Alternatives 5 and 6 are not only novel to the US fisheries management, but they also introduce a large amount of uncertainty which could hurt active participants. These alternatives are a natural experiment and not needed as the fishery is well-managed.
- The SCOQ landings value has economic multipliers that are higher than in typical of most fisheries. The SCOQ fisheries are well-managed based on core biological and management fundamentals of fishery management. Relative to the other fisheries that have ITQ systems in the country, none have this system that provides numerous upstream and downstream businesses that interact with our sector both directly and indirectly. Those businesses would also be negatively impacted under alternatives 5 and 6.
- In summary, it is clear from my comments that we do not support alternatives 5 or 6.
- An alternative that Sea Watch can support is sub-alternative 4.3, with slight modifications:
    - Surfclams
        - Two-part cap with an ownership cap of 35% and the combined cap at 65%.
    - Ocean Quahogs
        - Two-part cap with an ownership cap of 40% and the combined cap at 70%.
- Sub-alternative 4.3 (with recommended modifications) would allow the SCOQ FMP to be in compliance with NS4 without creating following non-compliance issues with NS5. And allows management to proceed with the best available science.

David Frulla, Kelly Drye & Wareen LLP

- I represent Surfside, Atlantic Capes, LaMonica Fine Foods, and Sea Watch International.
- Will be submitting written comments. We note the extreme effort being made not to support alternatives 5 and 6. We note there were changes to the public hearing document the Council had finalized/approved in June. The public hearing document

was changed substantially before the public document was provided. There were major changes made to the document; it added substantial information noting that there is now monopsony, deleted description of competitive market conditions, by deleting language about the competitive imports. In terms of the NS guidelines – a close reading of the NS guidelines – in no way could this be in line with FMP objectives that would require rewiring of the underpinnings of the fishery. The amount of clam quota that is not leased is unknown. Unless you know the information, you cannot calculate the benefits and hardships. When you look at the definition of the avoidance of excessive share of fishing privileges – its to avoid creating conditions by inordinate numbers of buyers or sellers that would not otherwise exists. The condition of going from A and B, you will never get into the issue of inordinate control.

Bob Brennan, Sea Watch International

- First, I want to talk about our company's leasing of ITQs.
- Selected payments by Sea Watch to absentee ITQ holders. Leaseholder A, $35+ million; leaseholder B, 3.8 million; and leaseholder C, $8 million.
    - Surfclam: $6.25/bu, or $0.60/lb or $15.60/case
    - Ocean quahog $1.50/bu, or $0.16/lb, or $4.16/case
- Leaseholder C was a major supplier in New Bedford. Decided to sell his boats and lease the quota at a high price.
- Absentee lease holder investment into the fishery is zero. In contrast, here is some of the expenses that we have in different areas:
    - New Vessel - $25 million
    - Georges Banks – $2 million
    - Wastewater compliance - $3 million
    - Allocation acquisition - $12 million
- Absentee lease rates have significantly impacted the reduced annual harvest over the last 20 years. These charges are passed onto the consumer without adding value to the resource. This decline can be largely due to the greed of absentee owners who have reinvested none of their expense-free revenue back into the industry. Additionally, both B and C leaseholders were offered contract extensions in return for renegotiating more reasonable rates and both refused.
- The vast majority, if not all absentee ITQ holders, initially had clam operations that they relinquished since leasing was much more profitable without [incurring] any expense. A more reasonable policy would have been to require the transfer allocation, at value, with the sales assets. This would result in all allocation holders actually being involved in the business. Absentee owners have no way of supplying clams to the producers.
- In terms of Georges Banks, approximately 40% of the resource is there. This area was opened a few years back due to the large investment made by the Truexes to develop testing procedures and protocol to address PSP issues. Without this investment, the quota, in all probability would had been reduced. All quota holders have benefited from the investment made by Sea Watch.
- Sea Watch pays in excess of $800,000 annually for testing.
- Alternatives 5 and 6 will not benefit the clam industry. However, they will increase the clam imports.

Sam Martin, Fishing Vessels Enterprises

- I represent a company that owns and operates 6 clam vessels out of New England.
- I want to speak against alternatives 5 and 6 because of the large negative impacts that they would have. We believed that the discussion/description in the document under these alternatives do not reflect what is happening in the industry. These alternatives are defined to increase lease activity for those that have not had the opportunity to lease out their allocations. They are also designed to align the quota with market demand. Neither of these have been proven to benefit the industry whatsoever. The market is driven largely by imports, and a large amount of investment is needed, so transferring the power to ITQ holders that have not been able to lease their ITQs would make the industry less competitive and would increase lease prices for tags. It would also result in increase in product prices and increase foreign imports. This is not fully vetted in the document.
- Our company does not lease ITQ, we own ITQ. If we decrease the quota by 30-35% in the surfclam fishery (our primary fishery) under the Quota A/B shares, there would be a grab for quota (we only own 10% of the total quota). Other larger companies would quickly absorb available quota and there would likely be little quota for us to lease, because other large companies already have long-term contracts. Probably couldn't afford to lease it even if it was available, because our margins are so slim. This would put us out of business. Splitting the A and B shares, could put us out of business by September or 4 months out of the year. Because under the current market demand, B shares would not be released.
- We borrow against 100% of our shares right now. So, the value of what we own, our collateral would also be reduced by 35% under alternatives 5 and 6.
- We would go out of business and this would also affect our associates (i.e., Galilean Sea Foods, Inc.).
- We support sub-alternative 4.3 with the following adjustment:
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- Finally, in terms of the leasing market for tags for inactive participants. It is a free leasing market – anyone can choose to compete with anyone if they chose to lease cheaper. They aren't precluded from anyone from leasing their tags due to monopsony power. That why these long-term contacts take place, and that's why A and B shares are problematic.
- We would go out of business and this would also affect our associates (i.e., Galilean Sea Foods, Inc.).
- Sonny Gwin asked - do you have both a processing capabilities and boats? Response: Yes.
- Staff asked - theoretically, what do you think would happen to the long-term leases in the market under alternatives 5 and 6? Response: Those alternatives would solidify any existing long-term contracts and it would be difficult for people that do not currently have long-term leasing agreements to get in; as a result, there would be a lot of quota that would be sitting in NOAA unleased).
- Staff asked: if there was no excess quota, would the long-term leasing market disappear? Response: You are speculating. Those quotas are already locked up. They wouldn't break the contract to speculate on the idea that they could get it for 50 cents cheaper from someone the next year. You have less ability to lease, because you don't have a lot of quota to lease. If the quota is cut, someone has to lease. But the price and product only demand a certain prices. So, until we can get better marketing and

markets to open up. So, others that can put it in a drawer on speculation. No one would go into a contract longer than they need to; however, they need to look further and further into the future.

Phil Twilley, City of South Port Inc

- I have been leasing my ITQ allocation the whole time. I either approach a processor or they approach me and it has always been a free market. I have the option to lease under long-term contracts if I wish to do so. It has been a give and take, so I've only been able to lease. So, it makes me think that those who are not, are holding out for something that isn't a reality right now in the market.

Jeff Pike, Bumble Bee Seafoods

- We have appeared in front of the Council and provided comments a number of times. As we indicated during the scoping comments, we believed this initiative [amendment] is driving solely by the need to satisfy the regulatory environment and has nothing to do with any issues that exists in these fisheries. We believed the current system that relies on US antitrust laws is functioning properly. There is no evidence that a person or company is capable of market manipulation. The fishery is functioning properly with no market power or other issues.
- On the issue of goals and objectives, we stand with our original comments we submitted in July 2017. We support the Council initiative to update the goals and objectives for these fisheries, we provided a list of revised goals and objectives for the Council to consider. Refreshing those goals and objectives to include things like sustainability and science/research would be good, especially after 30 years. So, refreshing is a good idea.
- With respect to the excessive shares issue, we stand by the written comments we have already made. We have indicated that if there is a cap to be implemented, we do not want to penalize any active quota holders, and allow for additional growth. While we think that sub-alternative 2.2 (single cap on based on ownership at 49% with unrestricted leasing) and sub-alternative 3.3 (combined cap at 49%), would satisfy those needs stated, Bumblebee prefers the approach stated under sub-alternative 4.3 as is (two part cap at 30%/60%). We think this approach better reflects the actual level of engagement in the fisheries by the various companies and would prevent any single entity to accumulate an excessive shares. We also strongly support the modifications to sub-alternative 4.3 made by the clam industry (35% ownership / 65% combined for surfclams and 40% ownership / 70% combined for ocean quahog). Bumble Bee owns quahog shares only, we do not fish, we do not own any vessels. We simply process clams that are delivered to us by vessels that fish those tags.
- Lastly, we strongly oppose alternatives 5 and 6. The stated goals of these alternatives is to align supply in the fisheries with market demand by creating a two-tier quota system. We submit that this goal is contrary/inconsistent with MSA NS1 which states that "conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry." Creating two classes of quota shares under alternatives 5 and 6, would force active quota holders to lease from non-participants in order to utilize the entire allocation that non-participants hold. We oppose these social engineering alternatives that appear to be designed more to benefit non-participants in the fishery than to establish and excessive shares cap. I have been involved in fisheries

management for over 40 years and never have I seen a goal or objective in the management system that is intended to align harvesting and market demand.
- Staff asked if there were any additional comments regarding the models or affiliation levels? Response: My comments assumed the 100% cumulative would be the one to consider.

Guy Simmons, Sea Watch International

- In my written comments which I will provide via email, I lifted a page from Magnuson that points out that alternatives 5 and 6 are in direct violation of NS5 and a portion of NS8. NS5 reads "conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose." Alternatives 5 and 6 would reallocate the quota allocation in a purely economic matter. This is the goal stated in the public hearing document, to align the supply in the fisheries with demand. This can only be described a measure that results in a form of economic allocation, which is exactly what NS5 disallows. There is no scientific basis for this type of reallocation in a fishery that has been well managed for 29 years under the ITQ system. NS8 states "(a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities." Alternatives 5 and 6 would have direct adverse impacts on fishing communities which have developed over the years and that have provided thousands of jobs in the SCOQ fishery. Alternatives 5 and 6 would have direct negative impacts on jobs by raising processors cost structure. This would result in an increase in prices to the US consumers and loss of US jobs due to increase in cheap imports. We live, work, and provide jobs in a capitalistic society, if this is a dirty word to you, I cannot apologize for that. Let strong processors develop more demand here at home and abroad. The need for excess ITQs will be in high demand when that market demand is increased.
- May I remind you that thousands of bushels are being leased every year by the processors that alternatives 5 and 6 could potentially decimate. The SCOQ fishery will not thrive and grow, and may be lucky to survive with these kinds of overbearing regulations/measures under alternatives 5 and 6. We do not agree with this type of social engineering.
- As of August 31, 2019, Sea Watch International has exhausted all of the ITQs owned by its owners. Therefore, every clam that crosses our plant from September 4 to December 31, 2019 will be leased from some accepted ITQ holder.
- Support sub-alternative 4.3 with a slight modification
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- There are only 2 ocean quahog processors. Thanks for the opportunity to make comments. I will provide written comments as well.

Dave Wallace, Wallace and Associates

- I want to make an additional positive statements, the clam industry is interested in doing things that are not anticompetitive. We couldn't do that even if we wanted to do it. We operate in a global world and are not an industry that gets to dictate what we want. To the contrary, our customers dictate to us; we can't just arbitrarily increase the price.

- If you implemented alternatives 5 or 6, the processors would go out of business because the costs and overhead would be out of control and our customers would not do business with us. They would reduce their purchases and quota would be of no use to anyone. Be careful what you wish for, you must understand the unintended consequences.

Tuesday, September 10, 2019, Warwick, RI
Hearing Officer: Peter deFur
Staff: José Montañez, Jessica Coakley

Attendees (8): Chris Shriver (Galilean Seafoods, Inc.), Tom Sproul (unaffiliated), Guy Simmons (Sea Watch International), Eric Reid (NEFMC member), Sam Martin (Atlantic Harvesters Inc), David Wallace (Wallace and Associates), Louis Legace (F/V Mariette), and Monte Rome (Intershell, F/Vs Tom Slaughter I, II, Bing Bing).

Peter deFur read the meeting statement to open the meeting. José Montañez gave a presentation on the contents of the amendment. Questions and comments were taken.

- Sam Martin (Atlantic Harvesters Inc), I have a question about alternative 5 and 6. Is there an impact chart? Staff response: Yes. It was not included in this portion of the presentation because we are showing rankings across sub-alternatives [only showing tables that have associated rankings; e.g., multiple sub-alternatives]. But the impact discussion of alternatives 5 and 6 we presented in bullet points and other tables shown during the presentation.

Guy Simmons – Sea Watch International

- I am the senior vice-president for marketing and product development at Sea Watch International. I have attended all public hearing meetings and gave separate comments at those already. Today, I will me making separate comments on investment in marketing and the expansion of the industry made by Sea Watch Intranational as an active ITQ participants in contrast to the contribution made by absentee ITQ participants.
- I have been involved with SCeMFiS and NFI – these are two primary mechanisms for cooperative science with SCOQ industry since 1997.
- Last night at our Salisbury meeting, our managing partner Bob Brennan commented on our capital investments. My comments tonight describe other investments made by our company. While my comments pertain to Sea Watch specifically, I can tell you that most of the other processors involved in the fishery have made similar investments. About 95% of the harvesting/processing groups involved in the fisheries participate in these types of activities.
- For the 1999 to 2019 period, Sea Watch International has made the following non-capital investments: NFI (membership fees) $639,019, NFI clam committee (cooperative science) $1,259,433, NSF/SCeMFiS (cooperative science) $275,000, Georges Banks PSP protocol (FDA and ISSC) $2,000,000, Marketing (marketing, training, expanding markets, global expansion, etc.) >$50,000,000. In addition, we also invested in MSC (Marine Stewardship Council) certification – this was done at zero cost to taxpayer with zero contribution form the absentee quota holders. In order to grow and maintain the fishery, we are constantly investing large sums of capital Under the Sea Watch and Truex umbrellas we have spent money and time to better

the fisheries, but we have never seen $1 come in to from absentee ITQ holders towards these efforts.

- We support sub-alternative 4.3 with slight modifications (two-part cap; 35% ownership / 65% combined for surfclams and 40% ownership / 70% combined for ocean quahog).
- At this point, particularly regarding the ocean quahogs at 40% ownership cap, there are only 2 processors for ocean quahogs. Last year, Sea Watch processed 40% of the total allocation not the harvest. So, we want to have a little room for flexibility if needed.

Sam Martin, Atlantic Harvesters Inc.

- I represent 6 vessels and about 35 employees and crew members.
- We support sub-alternative 4.3 with the adjustments recombined by industry. Agree with the bump so there can be alignment with the rest of the industry
    - For Surfclams: 35% ownership / 65% combined
    - For Ocean Quahog: 40% ownership / 70% combined
- This slight modification will provide the greatest flexibility so the fishery can maintain itself if there are future changes in the industry or markets. In the tables that show changes across ownership levels, this is the only one that shows consistency across ownership levels [affiliate levels].
- I want to speak against alternatives 5 and 6. Our company relies solely on owned quota, we lease very little. We operate at about 300,000 bu which are mostly owned with only about 6,000 bu leased. If alternatives 5 and 6 were chosen, then we would suffer a reduction in our ownership opportunities with the current levels of harvest rates which is about 65%. Therefore, we would have a reduction in the allowable quota by about 35% in the surfclam fishery. Our boats, employees, and plants would have no quota to work with after about September.
- It's not been established how much of the quota goes unleased. If in reality only 5% of the clam quota goes unleased and we reduce the harvest rates by 65%, then you will be decreasing the activity in the leasing market, not increasing it by implementing alternatives 5 or 6. This would be a reality if 65% of the clam ITQs go unleased and the harvest rates are reduced by 65%. If the market only allows us to have 65% netted out, we are not increasing the leasing market if the other quota is already leased. We don't think aligning the quota with the market, and leaving the quota in NMFS drawers will be beneficial. This will decrease the value of the fishery, decrease the leasing market, and increase the cost of leasing tags. It would decrease our ability to properly operate under these circumstances. These comments are critical because alternatives 5 and 6 deal with the leasing market. It is critical to know how much of the quota is going unleased. If it is 1% and you are going to reduce the viability of the industry to a large degree. Right now, it is an unknown number because that information is not available.

Tom Sproul

- I have been retained by members of clam industry to provide an expert peer review of the analysis and statements in the public hearing document. I will provide full details in writing before the end of comment period. I hold a PhD. in Agricultural & Resource Economic and work as an associate professor at the University of Rhode Island (URI). The comments provided here are my own and do not reflect any official position of the URI.

- In constructing my review, I consider the 2019 Northern Economic report, the Compass Lexecon report and the CIE report. I also considered the SSC report as source of text. These conclude there is insufficient information to conclude that there is information to support the need for an excess shares cap, There is no information to conclude that a harmful market power is being exercised in the SCOQ fisheries.
- Alternative 1 (no action/status quo) is the most prudent alternative to implement, followed by alternative 2 (quota share cap at 95%). These have the least potential for negative economic impacts [on the industry].
- Alternative 5 and 6 are likely to have the greatest economic impacts based on my analysis.
- With respect to all other alternatives and sub-alternative. They can all be prioritized by how much or how little impact they could have on the industry. The document concludes the most aggressive alternatives are best. The public hearing document reads as if the harmful exercise of market power in the SCOQ fisheries is an established fact. The public hearing document also reads as if it is an established fact that industry consolidation leads to negative socioeconomic impacts. This is untrue. The only thing to support this is text copied from the SSC report; which concludes that excessive consolidation would lead to negative impacts.
- The public hearing document misrepresents the CIE report by suggesting it recommended a 40% cap. This document includes text copied from the SSC report that monopsony power exists, this is not supported by other documents. I believe that the document comes to the exact wrong conclusion.

Monte Rome, Intershell, F/Vs Tom Slaughter I, II, Bing Bing

- I just found out about this meeting today while talking to other industry people that are attending the meeting. I was not aware of this meeting. But I do believe that status quo is the way to go. I don't see anyone taking advantage of any markets. I don't think anyone can. I'm mainly active in the fresh clam and live clam market, for nearly 30 years. I haven't seen any effort for anyone to take advantage of any situation that would allow for market manipulation in any situation.

David Wallace, Wallace and Associates

- I have been trying to avoid talking about alternatives 5 and 6 because this is not a socialist country, it's a capitalist country. Amendment 8 was very specific in its objectives. It was designed to address overcapitalization in the fishery and it was designed to be an industry funded buyout (of surplus capacity) and not a state funded buyout.
- There is a finite number of people that cannot rent their quotes. There are those who have quota and don't lease it because they don't want to and would like the ocean quahog market to collapse. On the surfclam side, all the big buyers will scale back their purchases because they are not going to put themselves in a position when they cannot meet their market demands. The clam quota holders will increase the leasing price and this will impact processing operations.
- This rolling average to derive Quota A shares is a downward spiral into oblivion.
- We have already had four or five major processors go out of business because we ran out of clams, and everyone started scaling back. Then we had the recession in 2007/2008/2009, and many restaurants went out of business. Which then further reduced the demand for these products which we supply, which are ingredients in things like clam chowder and clam sauce. So, some of it was the clam industry

including the non-participants that pushed for increase in prices, and some because of the economic situation in the US and the World. When the volume went down, overhead went up, and the weakest companies failed. That was anticipated. We had too many boats (including a very large number of little boats), and too many plants. So, amendment 8 gave each vessel a percentage of the quota, whether they deserved it or not, since some of those boats got in at the very end to get ITQ allocation. So now we had the industry funded buyout and the high production boats (for the last 3 to 4 years) were given less than they caught, so they could give more quota percentage to the low production boats to get a consensus and move the amendment forward. Those who had very low quota just sold it, and those who bought it went into a great deal of debt. The was also a group of people that got rid of their boats and plants, and just kept their paper entitling them to a percent of the quota. So, for a while there were people paying outrageous prices for the quota and then we collapsed the market because of that. As an example, people that inherit stocks, can do two things, they can sell it now at face value, or keep it hoping it will increase value in the future. So, this is business decision. In the clam business, there were two groups. One group sold their quota to people that wanted to stay in the business and by doing so went into substantial debt. The people that sold made a great deal of money by selling and getting out of the business. Another group made a business decision to stay in but need to cooperate with the industry. These are not mom and pop operations – this is industrial scale, with big cages and the product need to be processed very quickly.

- Alternatives 5 and 6 are a socialist idea that we have put forward in order to redistribute the allocations and all the work that the industry has done for many years. This is the most unfair communist plot that I have ever seen.
- I suggest that we go with the recommended modification for sub-alternative 4.3 (two-part cap; 35% ownership / 65% combined for surfclams and 40% ownership / 70% combined for ocean quahog). We already have 28% controlled by the highest surfclam owner.
- As the professor just said, you have it backward. What is positive for socioeconomics, good socialist stuff, would put companies out of business. Former members of the Council thought the MAFMC was the greatest in terms of coming up with new ideas. The MAFMC did everything first – first FMP, first ITQ. This is a world class operation. Now we are proposing to destroy it. If you are talking about 5 and 6, just get rid of it and just put a fixed quota on it. Without the processors, everyone is out of business. There are about 2,000 people of involved with the plants and boats and the MAFMC is just about to destroy it. If you are a socialist, you might as well wave a flag and say we got them.

Louis Lagace, LNA incorporated, F/V Mariette

- I am a single boat owner. I was awarded an allocation with my vessel. Just learned about this public hearing document and the complexity of it. I would generally go with alternative 1 (no action/status quo), but I am not strong on that.
- I never gambled on it. I was about 40 years old when the allocation was given out. I had a choice, to sell or to stay in the fishery. I figured that I could work and make a living with what I had. I sold clams when times were difficult and went for the ride. Over the course of time, I saw my way to borrow money to get more quota. Spent about $300,000 to $400,000 to keep myself in business. Now my son is poised to take over my business.

- At one point in 1999, I lost my boat and had to use my allocation for income for two years. Then, I bought a slightly larger boat and got back into the business. I don't want to be rich, or poor, just want to be successful.
- Now, things are getting more complicated. We just got shut out of our prime fishing grounds due to the NEFMC habitat closures.
- I maintained my ability to sell clams using my own allocation. Try to keep a good working relationship with whomever I sell too, provide a good product, and would like to stay involved in the business and my son too after me. I am not in favor of anything that smacks of socialism control in the industry.

Monte Rome, Intershell (3 fishing vessels)

- I have a question: Are you going through this because there is a market power issue? What proportion of the quota is taken? Because if not all the quota is taken, there is no market power issue. Staff response: Recently, about 60-65% of the quota is taken. Every ITQ program has to have measures to address excessive shares, part of it has to do with the legal and regulatory environment that we have to work with. In the public hearing document, there is a list of all the ITQ/LAPP systems in the country and Federal regulations require that all these systems have some type of provision to address/prevent excessive shares accumulation. The SCOQ ITQ system is the only one in the country that does not have those types of provisions in place. So, the SCOQ FMP is the only one that does not have all the requirements needed for an ITQ program.
- There is one more thing that I would like to say. There is access to funding, there is access to knowledge and the ability to go out and catch the quota. The regulations don't make us feel comfortable and spending more capital in this industry would not necessarily be supported because we don't know which way this is going. It would be a lot of risk to go out and try to catch that additional 1 million bushels. Why would you invest more money if your boat could just sit idle due to area closures?

Sam Martin, Atlantic Harvesters Inc.

- I want to make one more comment. We had a contract for a $1 million vessel and because we lost Nantucket [due to habitat closures], and when we saw the push towards or highlighting of alternatives 5 and 6 (which would reduce our quotas), we cancelled the contract 2 days away from buying the boat.
- We have taken our company off the table for a year for producing more clams because of the perception of what alternatives 5 and 6 could do to us. I hope this is not falling on a deaf ear, or that the clam industry just wants their way. These folks are scared to death of a couple of these alternatives.
- There is a tone here that you are hearing from the industry, that are small players in the industry which are active with a little quota or are inactive and are relaying/using 100% of their quota for income. This shows the collective partnership that is found in this industry. I know for a fact that there are companies that are leasing quota/trying to break into this market.
- We have to have an excess share definition, we know that, but let's pick one that is workable and will not disrupt the fishery.

List of participants and public hearing meetings. Cells shaded grey represent participants that provided comments.

Participant	Public Hearing Meeting			
	Aug. 1, 2019 Cape May, NJ	**Aug. 7, 2019 Webinar**	**Sept. 9, 2019 Salisbury, MD**	**Sept. 10, 2019 Warwick, RI**
Tom Alspach	✓	✓		
Bob Brennan			✓	
Joe Cimino	✓			
Barry Cohen	✓			
Tom Dameron	✓			
David Frulla			✓	
Mike Garvilla			✓	
Jerry Gordon			✓	
Peter Himchak	✓	✓		
Tom Hoff		✓		
John Kelliher	✓			
Guy Simmons	✓	✓	✓	✓
Chris Shriver	✓			✓
Louis Lagace				✓
Michael LaVecchia	✓			
Ann M.		✓		
John Martin			✓	
Sam Martin		✓	✓	✓
Steve Martin			✓	
Joe Myers			✓	
Jeff Pike			✓	
Monte Rome				✓
Eric Reid				✓
Jamie Sanyer	✓			
Tom Sproul				✓
Martin Truex	✓			
Phil Twilley			✓	
Joshua O'Connor	✓			
David Wallace	✓	✓	✓	✓
Total (attended/ commented)	13/7	7/6	12/8	8/6

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August 1, 2019

Chris Moore, Ph.D.,
Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901

Dear Dr. Moore,

Please accept these comments on behalf of myself and Sea Watch International, Ltd in regard to the Excessive Shares document currently out for public comment which were presented at the Cape May, NJ meeting August 1, 2019.

As a result of Amendment 8 being enacted in 1990, the Surfclam and Ocean Quahog fishery has experience considerable consolidation on both the harvest and processing side of the business. As I understand the reasoning behind Amendment 8, consolidation was one of the main objectives. The harvesting and processing of the Atlantic Surfclam and Ocean Quahog is a highly capitalized business both on land and sea. The economies of scale with fewer companies came not only at a high price for equipment, infrastructure and boats but also the purchase and/or leasing of ITQ's or allocation.

These substantial investments made by individuals and companies are the only reason SC/OQ fishery remains today. These investment produce products, jobs, tax revenues and buoy traditional coastal communities. These are substantial risk that have been taken.

Those individuals who chose to relieve themselves of physical assets and hold onto ITQ's and treat them as a property right put themselves at risk of devaluing the one asset that they have left, ITQ's. By not making investments in assets, science or marketing they put themselves at risk of not having a market to lease their ITQ's.

What if every individual or company that received an ITQ grant as a result of Amendment 8 decided to sell their boats and/or processing facilities and wait for the phone to ring to see who wanted to lease or rent their tags. The phone would not ring.

I use these examples of contrasting voluntary risks to substantiate my objection to the consideration of Alternatives 5 and 6 in the Excessive Shares Public Comment Document. Alternatives 5 and 6 are not a mechanism to control excessive shares rather a mechanism to re-allocate a clearly defined resource under the MSA. The ITQ is not a property right in and of itself as clearly defined in;
MSA Sec. 303A
Subsections (4) shall not create or be construed to create, any right, title, or interest in or to any fish before the fish is harvested by the holder and
(5) shall be considered a grant of permission to the holder of the limited access privilege or quota share to engage in activities permitted by such limited access privilege or quota share.

Understanding the task set before the council to decide on an excessive share cap and at the recommendation/direction of the Council staff to find an Alternative within the document to support we feel we can do this. In the context of a consolidated industry which must be allowed to innovate and grow which will create a robust leasing market for ITQ's, Sea Watch would support Sub Alternative 4.3 with a slight modification.

Surfclams

Two-part cap with an ownership cap of 35% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 65%.

Ocean Quahogs

Two-part cap with an ownership cap of 40% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 70%.

Sea Watch would support the following.

ES-2. Summary of excessive shares review alternatives.
Alternative 1: No Action
ES-3. Summary of framework adjustment process alternatives.
Alternative 1: No Action
ES-4. Summary of multi-year management measures alternatives.
Alternative 2: Specifications to be set for the maximum number of years consistent with the NRCC approved stock assessment schedule.

On behalf of myself and Sea Watch International, Ltd. we appreciate the opportunity to comment on this very important decision to be made that could have devastating ramification for our company and industry if Alternatives 5 or 6 are recommended.

Regards,
Sea Watch International, Ltd.

Guy B Simmons

Guy B Simmons
Sr. VP Marketing, Product Development
Government Relations and Fisheries Management

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August 8, 2019

Chris Moore, Ph.D.,
Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901

Dear Dr. Moore,

Please accept these comments on behalf of myself and Sea Watch International, Ltd in regard to the Excessive Shares document currently out for public comment which were presented during the webinar meeting August 7, 2019.

In my comments August 1, 2019 in Cape May, NJ I made reference to several contributions that most active industry participants and Sea Watch International bring the SC/OQ fishery. These comments will focus around employment. In order to frame these comments, I would like to draw the distinction between Active Participants and Absentee Participants. It is my belief that an "Active Participant" is someone, a company or an entity that actually harvest clams, process clams, markets clam products and contributes to cooperative science that helps keep the fishery stable and, in some cases, making it stronger. It is my belief that an "Absentee Participant" is an individual, a company or an entity that received ITQ's as a grant resulting from the passage of Amendment 8 and chose to unburden themselves of any activity or infrastructure that might require ongoing investment and effort.

When we draw a comparison between the two "Participants" in regard to socio-economic contributions the differences are quite stark. Literally thousands of jobs are created by the "Active Participants" supporting thousands of family members, payroll, taxes, regulatory fees and permits are all required to maintain this infrastructure and employment of so many people.

The Sea Watch International and TMT clam companies employ hundreds of people from Maine to Virginia including a few salespeople scattered around the country.

Milford, DE	280
Easton, MD	167
New Bedford, MA	204
Mappsville, VA	9
Whiting, ME	32
TMT Clams	204
Total	896*

*numbers reflect peek season production and can fluctuate as much as 30%

We are supportive of an alternative within the current document, but it also bears discussing the alternatives that could have a catastrophic result for the SC/OQ fishery and Sea Watch International and TMT Clams. These alternatives are 5 & 6 which basically reduces everyone's quota including the "Absentee Participants" and forces harvesters and processors to lease quota before all of their owned quota is used. This will raise cost to the processers and consequently to the US consumer, we have seen this cycle before, and it has been discussed numerous times. When domestic prices get too high the cheaper imports who are not bound by nearly as much regulation as US fisheries have an opportunity to gain market share in the US. In 2018 $79,000,000.00 worth of clams were imported into the US from China, Canada, Thailand Vietnam, Chile and others. Depending on how you break that down it could be equal to 800,000 to 1,000,000 bushels of domestic surfclams or ocean quahogs. When foreign companies are able to take market share the demand for US domestic clams is reduced and jobs are put in jeopardy and ultimately lost.

Any way you look at alternatives 5 & 6 the "Absentee Participant" seems to be the one that is getting preferential treatment and is actually gaining market power by being able to charge whatever they please to a market held hostage by an unfair regulation. I would think that US regulators would be more interested in protecting American jobs and the American consumer than protecting individuals, companies or entities that are simply waiting for a check to be sent their way.

At the risk of being redundant I would like to restate our support of the following measures.

Sea Watch would support Sub Alternative 4.3 with a slight modification.

Surfclams

Two-part cap with an ownership cap of 35% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 65%.

Ocean Quahogs

Two-part cap with an ownership cap of 40% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 70%.

Sea Watch would support the following.

ES-2. Summary of excessive shares review alternatives.
Alternative 1: No Action
ES-3. Summary of framework adjustment process alternatives.
Alternative 1: No Action
ES-4. Summary of multi-year management measures alternatives.
Alternative 2: Specifications to be set for the maximum number of years consistent with the NRCC approved stock assessment schedule.

On behalf of myself and Sea Watch International, Ltd. we appreciate the opportunity to comment on this very important decision to be made that could have devastating ramification for our company and industry if Alternatives 5 or 6 are recommended.

Regards,
Sea Watch International, Ltd.

Guy B Simmons

Guy B Simmons
Sr. VP Marketing, Product Development
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August 21, 2019

Michael Luisi, Chair
Mid-Atlantic Fishery Management Council
800 N. State Street, Suite 201
Dover, DE 19901

Re: Unauthorized Changes to Excessive Shares Public Hearing Document

Dear Chairman Luisi:

This correspondence is submitted jointly and on behalf of Sea Watch International, Ltd.; Cape May Foods, LLC d/b/a LaMonica Fine Foods; Surfside Products, Inc.; Atlantic Capes Fisheries, Inc. and Truex Enterprises, all of whom have approved the following.

After considerable comment at the June meeting the Council voted to approve a "final" version of the public hearing document to be used in connection with the pending excessive shares amendment. Following the Council's final vote, you stated that "we now have a public hearing document," and presumably the full Council agreed.

But that was not so. After the Council's "final" approval of the document, certain parties – presumably Council and/or NMFS staff – took it upon themselves to make substantial substantive changes to the document, which were not resubmitted to the Council for approval and which we in industry discovered only after the document was published for the current comment period.

As briefly noted below, these unauthorized alterations of the public hearing document include multiple false claims and misrepresentations which the Council did not consider at its June meeting. Because of this, we first request answers to two questions:

1. Who made these changes and by whom were these changes approved?

2. Under what authority were these changes made, inasmuch as they substantively altered a Council document without Council approval?

The Council approved public hearing document included comparisons of the "impacts" of each of the pending alternatives, and at page 153 devoted just a half page to a straightforward summary of purported impacts of alternatives 5 and 6.

In contrast, the subsequently published public hearing document, at length at pages 152-158, now includes highly embellished, and false and misleading, representations about alleged conditions

in the clam industry that alternatives 5 and 6 supposedly would address. And those baseless conclusions now have been inserted into the public hearing record without the Council's knowledge, and after a different public hearing document was "finally" approved in June.

As an example, the "amended" public hearing document now claims that at market equilibrium (where we are now), processors can satisfy their customers' demands with their own ITQ shares, "and all other shares would go unused." This is utterly false; hundreds of thousands of ITQ shares held by non-processor independent ITQ owners are leased every year. According to the altered public hearing document, if the quota is reduced to harvest levels or less, "all ITQ shareholders would be able to utilize their shares and the monopsony power [of the processors] would disappear." This is false; in that scenario "monopsony power" would be held by the non-participating ITQ shareholders who could demand whatever price they chose for the shares necessary for processors to keep production in line with preexisting levels.

The unauthorized altered version of the hearing document compounds its misrepresentations by specifically incorporating the May 2019 SSC report – which includes multiple false claims such as the assertion that, because the processors need only utilize their own ITQ shares, independent ITQ owners have been denied their financial "piece of the action." That is flatly untrue; non-processor ITQ owners have been paid many, many millions of dollars for the lease of their ITQ shares, and those huge payments to these non-participants in the industry continue today.

But this is not the place to debate the veracity of the claims in the unauthorized revised public hearing document that now underpins the public hearing process. Nor should the burden now be upon industry to correct the record by responding piecemeal to all of the new substantive commentary that has been inappropriately inserted throughout the public hearing document, after the Council had approved the "final" version in June.

Given the unauthorized act of altering a Council document after its final approval, and considering the highly prejudicial nature of the false aspects of such alterations, there is only one fair and equitable solution to the current problem:

The current public hearing draft regarding the excessive shares amendment, published in July, should be withdrawn and stricken from the record. In its place, the public hearing document that actually was approved in final form by the Council in June should be inserted in the record, and that document should be deemed the controlling Council pronouncement on excessive share alternatives.[1]

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[1] The one exception would be to allow the correction to the HHI graph that was in fact approved as an amendment by the Council during the June meeting. This is necessary to accurately reflect consolidation within the industry over time.

We therefore formally request that the Council proceed to take this action so as to clear and correct what is now a prejudicially tainted public record, resulting from the introduction of claims and statements that never were approved or authorized by the Mid-Atlantic Fishery Management Council. In addition, we do request answers to Questions 1 and 2 above.

We thank you and the Council in advance for correcting this situation.

Very truly yours,

Thomas T. Alspach

On Behalf of:

Sea Watch International, Ltd.
Cape May Foods, LLC d/b/a Lamonica Fine Foods
Surfside Products, Inc.
Atlantic Capes Fisheries, Inc.
Truex Enterprises

TTA/tsd

cc: Mid-Atlantic Council
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May 22, 2019

Mid-Atlantic Fishery Management Council
Atlantic Surfclam and Ocean Quahog Committee
800 North State Street, Suite 201
Dover, DE 19901

Re: Atlantic Surfclam and Ocean Quahog Excessive Share Amendment Public Hearing Document

Dear Committee Members:

Please consider the following proposed edits/revisions to the excessive shares public hearing document, in connection with the Committee meeting scheduled for June 3:

I. The Public Hearing Document Should Clarify the Existing Definition of "Excessive Share"

The draft of the public hearing document is confusing in its current form. At the outset, the draft fails to clarify that the definition of the term "excessive share" already exists and has been approved by NOAA/NMFS, as well as this Council's predecessors.

NOAA recently recited the accepted definition of "excessive share" in connection with Amendment 18 to the Northeast Multi-Species FMP, stating that an "excessive share" of fishing privileges is an amount "that would allow an entity to influence the market to its advantage (i.e., exert market power)." This was the same standard that the independent economic experts who analyzed the SCOQ fishery adopted, in concluding that no entity currently holds market power that would enable it to raise prices or exclude competition. This is also the standard adopted by this Council's predecessors as part of Amendment 8, when it was determined that, should an industry participant obtain and abuse market power, there would be a referral to the DOJ for enforcement procedures.

Instead of acknowledging this existing definition of an "excessive share," the draft plan states that: "For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclams or ocean quahogs." In fact, "the Council" has never "defined" an excessive share in this fashion. The Council has not adopted any excessive share definition at all.

But more to the point, the supposed "definition" offered in the draft is nothing more than a tautology: An "excessive share" is a share that exceeds the cap on "excessive shares." This makes no sense.

What the draft should state is that an excessive share is an amount of ITQs in excess of a percentage cap because an ITQ share in excess of that cap would yield market power – that is, the power to influence prices or exclude competition. It is likely that the drafters of the document do not want to define "excessive share" in this way, because that definition leads to an obvious question that is not answered anywhere in the draft: Where is the evidence for the claim that an amount of ITQs in excess of any of the proposed caps would yield market power and its effects? The draft provides no support at all for how/why a share of ITQs in excess of any of the caps would suddenly create "market power." For example, one of the alternatives proposes a percentage cap of 49% – so that 50% ITQ ownership would exceed the cap and thereby become "an excessive share." But why? Where is the support for the claim that an additional percentage of ownership beyond 49% bestows market power on the holder of those ITQ shares?

There is no factual or legal basis for defining "excessive share" as the draft document does; instead, analysis and factual support is needed for demonstrating that ITQ holdings in excess of a specific percentage amount would yield market power on behalf of the owner of those shares, and therefore those shares would be "excessive." The hearing document should be amended accordingly before it goes out to the public.

II. Alternatives 5 and 6 Should be Deleted From the Public Hearing Draft

Alternatives 5 and 6 should be deleted because they are not "excessive share" control mechanisms, but instead are ITQ redistribution plans intended to create an artificial "market" for non-participants in the industry who still own ITQs. These alternatives would reduce current ITQ levels among industry participants by approximately 40%, compelling them to lease additional ITQ rights from industry non-participants, in order to maintain their previous levels of harvest. This would award market power to the ITQ owning non-participants, would reward those non-participants who do not contribute to the industry in any way and who have no investment at risk, would reduce the ITQ collateral now relied upon by banks for loans to industry participants, and would increase the cost of producing clam products (because of leasing fees) which would unnecessarily increase prices to consumers – all for the sole purpose of creating new revenue for non-participating ITQ holders who add nothing to the industry.

For these reasons alternatives 5 and 6 should be eliminated from the public hearing draft, as they are market restructuring plans and not excessive share controls.

Here is an illustrative example of how alternative 5 would operate as social engineering/share reallocation rather than as an excessive share cap:

Under alternative 5 the share "cap" would be 40% of total ITQs

Assume an individual owns just 10% of ITQs, well under the cap.

With the 3.4m quota, that shareholder would be entitled to 340,000 bushels of surf ITQs.

But under alternative 5 the shareholder's entitlement would be reduced to 10% of the annualized harvest, about 2.2m bushels, yielding that shareholder only 220,000 bushels of surf ITQs.

Before any class B shares would be made available, under alternative 5 all of the class A shares must be utilized. This would mean that, in order to make up the 120,000 bushels lost under the alternative 5 "quota," the shareholder would be compelled to lease those ITQs from another absentee ITQ holder, not using his or its shares. Note that the price the absentee ITQ holder could extract for those additional shares is completely unregulated.

So simply in order to maintain the same harvest he had previously accomplished (340,000 bu), that shareholder would be compelled to pay – likely hundreds of thousands of dollars – for the lease of 120,000 bu of ITQs from an absentee ITQ holder not engaged in fishing or contributing to the fishery in any way.

The plan document supposedly offers an analysis of both positive and negative impacts from each alternative. Where is the discussion of negative impacts resulting from the scenario just described? The same scenario will play out throughout the industry if alternative 5 or 6 is adopted, but no analysis of its negative impact is included in the draft.

Instead, the draft rationalizes these alternatives as a means of "aligning market supply and demand." By what authority does the Council have the right to do this? This is simply economic/social engineering – an effort by the Council to reallocate ITQs in a manner that ensures every ITQ holder is guaranteed a market for his/its shares – the "free market" in ITQs which was to be the bedrock of Amendment 8 is totally abandoned.

According to the draft, "aligning supply in the fisheries with market demand may result in more activity in the leasing market." (Draft, p. 18). Alignment of market supply and demand is not a goal or objective of the FMP, nor is stimulating "more activity in the leasing market." These are solely economic objectives, and fishery management may not be based solely upon economic manipulation of the market. In any event, "alignment of supply and demand" has nothing to do with containing excessive shares.

In fact, alternatives 5 and 6 would work directly contrary to FMP Objective 3 which is to allow the "industry to operate efficiently," that is, to allow "industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry." Alternatives 5 and 6 would introduce expensive and inefficient externalities into the operation of the fishery:

actual industry participants, many of whom have invested millions of dollars in acquiring their allocation rights, would have those rights arbitrarily limited by the reduced "Class A" quota scheme, so as to require them to lease quota from non-participants in the industry, in order to maintain their overall level of harvest. The non-participants whose leasehold rights would become necessary for continued operation of the fishery would have participants over a barrel, and would be in a position to extract unreasonable ransoms for the lease of their ITQs by participating harvesters. Put another way, this would create market power – an excessive share – on the part of industry non-participants to whom harvesters would be required to turn to obtain fishing privileges necessary to sustain their prior levels of harvest.

This is not an "excessive share" control mechanism limiting those who participate in the industry, which is the purported intention of the pending amendment. Note that in the example above, **participants who are well below the excessive share "cap"** would nevertheless lose the ability to utilize ITQs in which they had invested, even though by definition they would not have an "excessive share."

III. The Hearing Document Description of Alternatives Should be Corrected and Amended Before it is Approved

Box ES-1. "Summary of Alternatives" (page 3):

Alternative 1: The draft inaccurately states that "no limit" on share ownership is included in the FMP. This summary should include a statement that, under the No Action/Status Quo alternative, "an excessive share is an amount of share ownership that enables the owner/holder to exercise market power, as defined above, in violation of the US Antitrust Laws." In the interest of accuracy and objectivity, the "summary" of alternative 1 additionally should state that: "The U.S. District Court for the District of Columbia has ruled that the status quo/no action alternative is compliant with NS4 of the MSA, and that ruling has not been overturned or appealed." It is misleading to imply, as the draft does (see below), that the status quo alternative is not compliant with the law, specifically NS4.

Alternative 2.2: Draft misleadingly suggests this alternative would lead to two entities dominating the fishery (each with 49%); should add at the end of the last sentence: "or three large entities holding 30%, 30% and 40%"

Alternative 2.3: Draft does not accurately state origin and purpose of this alternative. The summary should be edited with language to the effect: "this alternative is included based upon a vote by the MAFMC SCOQ Committee. It is intended to function the same as the status quo alternative, but to include a percentage cap – 95% – to satisfy GARFO's contention that an excessive shares limit must include a "quantifiable" or "measurable" amount of shares."

Alternative 3.3: Add at the end of the last sentence: "or three larger entities holding 30%, 30% and 40%."

Box ES-2. "Summary of Review Alternatives" (page 5)

Alternative 1: To make this statement accurate the following should be added: "But review by the DOJ is required if it is perceived that any shareholder has achieved market power and is acting in an anti-competitive fashion under the federal antitrust laws."

Section 1.2 "Summary of Impacts" (page 6-8):

Alternative 1 (page 6): This section misrepresents/mischaracterizes the status quo alternative. It is not true that there is "no specific limit" in the current FMP "as required under NS 4 of the MSA." To the extent a "specific limit" is intended to refer to a quantifiable or measurable standard, there is no such requirement under NS 4. And it is not true that there is no "limit" on excessive shares in the status quo FMP; instead, the limitation is that stated in the summary (revised) of Alternative 1 above.

This section misleadingly implies that under the status quo the DOJ would be required to assess every ITQ transaction, and all share ownership, and that the DOJ is not in a position to do this. But this is not the way the DOJ has functioned under the status quo alternative for the past 29 years. As noted above the status quo only requires that potential excessive shares be brought to the attention of the DOJ if it appears that a shareholder has acquired sufficient share ownership to exercise market power in an anti-competitive manner under the antitrust laws. The status quo imposes no significant burden on the DOJ at all.

Sub-alternative 2.3 (page 8): This section again misstates the origin and purpose of the 95% alternative, as noted above. This alternative was not included because of the argument "that industry participants cannot exert market power in the final product market (monopoly)." Instead, this alternative was added by the MAFMC SCOQ Committee because GARFO has insisted that there must be a "quantifiable" excessive shares standard, and 95% was selected to provide a "quantifiable" cap that actually functions in the same way as the current status quo.

It is never mentioned in the hearing draft, and should be, that whatever cap is under consideration, it does not trump the federal antitrust laws if implemented. So if the 95% cap is adopted, but in the future it could be demonstrated that an entity with only 60% or 70% of the ITQ shares was exercising market power in an anti-competitive manner, that would violate the antitrust laws and could require divestiture, even though the holder did not control 95% of the ITQs.

"Comparisons Across Sub-Alternatives 2.1 to 2.3" (page 9):

The bases offered for "comparisons" of these alternatives in the draft are entirely without substance or merit, and this language must be made credible, or should be deleted. The draft repeatedly purports to weigh "positive" and "negative" "socio-economic impacts" – but says nothing about what those "socio-economic impacts" supposedly are, or where the evidence for these bald statements in the draft may be found. The only "impact" alluded to is the concern of "protection against excessive consolidation." What is "excessive consolidation"? And why does it constitute a "negative impact"?

The whole purpose of Amendment 8 was to effectively compel consolidation, and this is what has happened in this industry, and until now this has been considered a good thing – both for the industry participants who now operate more efficiently and for those who exited the industry by selling – often for very substantial dollars – the allocation rights they were given by the federal government.

This supposed weighing of "impacts" amounts to no more than gibberish, as terms are not defined, and there is no basis or evidence at all offered for the conclusionary statements included.

"Comparison Across Sub-Alternatives 3.1 to 3.3" (page 11):

As with the claimed "comparisons" of sub-Alternatives 2.1 to 2.3, the discussion of sub-Alternatives 3.1 to 3.3 again is based upon unidentified and undocumented "socio-economic impacts" with no description or evidence of what these might be – except for the claim that, again, the different sub-alternatives may provide "a larger degree of protection against excessive consolidation." See the comments above regarding the total absence of a description of what "excessive consolidation" might be. Accordingly, these alleged "comparisons" are meaningless and this language should be deleted from the draft unless "socio-economic impacts" can be identified and described and quantified, and "excessive consolidation" can be identified and explained, including importantly a discussion of why such "consolidation" can be a "negative impact" inasmuch as Amendment 8 was precisely intended to bring about such consolidation.

"Comparisons Across all Excessive Share Alternatives" (pages 15-18):

This section begins by repeating the misleading and inaccurate characterization of Alternative 1, commented on above. It repeats the claim that the no action alternative creates "no limit" on the accumulation of shares, but this is false for the reasons already described above regarding the status quo procedure for invoking the antitrust laws in the event of market power and anti-competitive conduct resulting from share accumulation. But in this "comparison" section, this defective characterization of alternative 1 is amplified by adding the entirely unsupported claim that alternative

1 will lead to "negative impacts in the long term" because it provides "no protection against excessive consolidation."

As previously noted, nowhere is it explained what "excessive consolidation" might be, and what the basis and evidence is for the contention that "excessive consolidation" will result from the status quo alternative. Do we have "excessive consolidation" now? Presumably we should because the status quo already has been in effect for "the long term" – i.e., 29 years. So the draft should explain how there is excessive consolidation currently, since we have experienced the "long term," and should explain why, and provide evidence for, the claim that "excessive consolidation" has resulted from this long term existence of alternative 1.

"Purpose and Need of the Action" (pages 33-34):

The draft states that the action proposed is necessary because "Amendment 8 did not include ... measures that limited the maximum amount of shares that could be owned by an individual, corporation or entity." This is false. This language should be deleted or amended for the reasons already discussed. Amendment 8 most certainly did limit the "maximum amount of shares" to that amount that would not allow an individual/entity to exercise market power and engage in anti-competitive behavior. It was intended – with the Secretary's approval – should the Council perceive market power was being exercised, there would be a referral to DOJ. As previously noted, this excessive shares control procedure has been explicitly approved by a federal court. The draft should candidly acknowledge these points, and should not misleadingly suggest there was "no limitation" on excessive shares following Amendment 8.

Section 5.1 "Excessive Share Alternatives" (page39):

The draft precedes the discussion of excessive share alternatives with the statement that "the Council is required to define measurable criteria for what constitutes an excessive share ... ."

This statement is false, and should be deleted from the draft. There is nothing in the Magnuson Act that "requires" an excessive share limitation to be based upon "measurable" (i.e., quantifiable) criteria" in fact, the status quo/no action standard for an "excessive share" has been in effect for 29 years, and does not include a specific "measurable" standard for "defining" an excessive share – e.g., number of bushels, etc. And without such a measurable, quantified standard the Secretary of Commerce and NOAA have approved the current "unquantified" standard, and that standard has been upheld by a federal court as explained above.

This is not to say that the Council is forbidden to adopt "measurable criteria" for how an excessive share is controlled; that remains their prerogative. But it is entirely misleading for the draft to state that such measurable criteria are "required" and this reference, for that reason, should be deleted.

Section 5.1 next states that "at this point it is unclear whether any of the alternatives under consideration will result in the need for any individual, entity or corporation to divest." Why should this be unclear? At considerable expense to industry, the agency has been collecting data on share ownership for three years now, and that data should be sufficient to determine whether divestiture will be necessary under any alternative.

Further, even if the need for divestiture is "unclear" the failure of the draft plan to address how divestiture would be implemented is a critical deficiency in the document that should be corrected before public hearings. If there is even a possibility that individuals or firms – many of whom have invested millions of dollars in ITQs – may be required to "divest" as a result of Council action, that action should include a procedure for how divestiture – actual loss of those investments – will occur. It is no answer to suggest that the Council/staff can simply kick this can down the road and let NMFS decide on divestiture at a later date. An excessive shares amendment that could require divestiture absolutely should include procedures for how such divestiture would work, if only out of fairness to the industry affected.

Past Councils, during the long history of excessive share consideration, have opined that upon enactment of an excessive share control rule all then owned or controlled shares would be "grandfathered" into place. At a minimum, this should be the rule and the plan and amendment should so state. Not only is this fair and equitable – in view of investments and contracts already made – but it also is logically defensible because the expert economic consultants retained by NMFS have concluded that, at current levels of ITQ control by individuals/entities, no one in industry in a position to exert market power and engage in anti-competitive conduct.

The draft plan document should not go out to public hearing until it fairly addresses the issue of divestiture and proposes how divestiture would occur should it be necessary.

Section 5.1.1 "Alternative 1: No Action/Status Quo" (page 40):

This short section repeats the inaccurate canard that no specific "definition" of an excessive share is included in the FMP "as required under NS4 of the MSA." For the reasons stated at length above, this statement is inaccurate and should be deleted.

IV. Public Hearing Document includes no evidence or basis for how/why ITQ holdings in excess of the respective proposed percentage caps would be "excessive"

The theory behind alternatives 2 through 4 and their "sub-alternatives" is that ITQ holdings in excess of any of the proposed percentage caps would be deemed "excessive" and impermissible under the FMP. For example, Alternative 2.2 proposes a single cap of 49% for surfclams and quahogs. Therefore, ITQ ownership of 50%, or 55%, would be deemed "an excessive share." Why? Where is the basis and what is the evidence for proposing that ownership of 49% of ITQs is acceptable, but ownership of 50% would be "excessive"?

Similarly, alternatives 3.2 and 3.3 propose 40% and 49% caps, respectively, for combined ownership and leasing of ITQ shares. This means that, for example, if 3.2 were selected, combined ownership/leasing of 41% of ITQs would be "excessive" although ownership/leasing of 40% would not. Where is the evidence and what is the basis for this? How does the additional 1% – or any additional percentage – make that share "excessive"?

Nothing in the hearing draft, or in the discussion of any of the alternatives, explains how/why a 28% or 49% cap would be acceptable, but 29% or 50% would be "excessive." The same is true of the 40% and 49% caps in 3.2 and 3.3. Put another way, the percentage caps are not based upon any evidence or analysis of economic or anti-competitive behavior; instead, they are simply arbitrary.

As a proposed administrative rule the pending amendment cannot be arbitrary and capricious if it is to have a legal basis. To keep the proposed amendment from the "arbitrary and capricious" category, the Council must identify a rational, evidentiary basis for why each of the proposed percentages represents acceptable ownership, but even an additional one percent in each instance would become an "excessive" share, that is, would yield market power. Nowhere does the public hearing draft attempt to explain what the basis for these arbitrary caps might be, and this document should not go out to public hearing until those bases are identified so that the public and industry fairly may comment upon them during the hearing process.

V. The Public Hearing Document Does Not Define or Address Permissible "Leasing"

Multiple alternatives proposed by the draft include limitations on the "leasing" of allocation/ITQ rights – but nowhere is it explained what is intended by the term "leasing." This was a significant issue considered by the Compass Lexecon economists who concluded that there should be no constraints on leases of one year or less, because leases of such short duration could not really support the exercise of longer term market power.

At the very least, the same exclusion on leasing prohibitions should be included in the alternatives – that is, leases of one year or less should not be considered against any "percentage cap." This has a practical purpose beyond the point made by Compass Lexecon. There are many short term lease arrangements made throughout every fishing year that result from market ups and downs, short term, during the course of each such year. These short term leases are intended only to address short terms needs for additional harvest rights, and have nothing to do with an effort to accumulate market power. Indeed, some ITQ rights are leased and released several times during the course of a year for this same purpose. So such short term leases should not be included against any percentage cap.

And on a related note, the draft document does not explain, but should, whether an entity will have additional harvesting/processing rights even if he/it reaches the percentage cap that is finally selected. Assume for example that the percentage cap is 49% for both ownership and leasing. But assume further that an entity reaches that cap, but, as has been true for the past decade, there are large

amounts of the quota unharvested (generally, 40% for each species). Why shouldn't that individual or identity be able to lease further quota rights for the remainder of the year in order to continue to use that unharvested allocation? It should be clear that there are no constraints on continuing to harvest, or purchase/lease shellstock, even when a percentage cap is reached – provided that there is still ample quota available. This only makes sense as a means of achieving optimum yield, and the plan should address this.

For all of the reasons described above the draft public hearing document is not yet ready for public hearing, and the issues addressed herein should be given further consideration by the staff, the SCOQ Committee and the Industry Advisory Panel with a revised final draft to come before the Council when that work is finished.

Very truly yours,

Thomas T. Alspach, General Counsel
Sea Watch International, Ltd.

TTA/tsd

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September 3, 2019

Dr. Christopher M. Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 N. State Street, Suite 201
Dover, DE 19901

Re: SCOQ Excessive Shares Amendment Comments

Dear Dr. Moore:

Please accept these written comments on behalf of Sea Watch International, Ltd. in response to the proposed alternatives for a pending "excessive shares" amendment to the SCOQ FMP.

Further below, we will recommend the alternative that we believe should be adopted by the Mid-Atlantic Council as its preferred alternative for the FMP amendment. But because of its significance, we begin with discussion of the alternatives that, under any circumstances, should be rejected by the Council: specifically, alternatives 5 and 6.

I. Alternatives 5 and 6 Should be Rejected

Alternatives 5 and 6 should be rejected because they are not "excessive share" control mechanisms, but instead are ITQ redistribution plans intended to create an artificial "market" for non-participants in the industry who still own ITQs. These alternatives would reduce current ITQ levels among industry participants by approximately 40%, compelling them to lease additional ITQ rights from industry non-participants, in order to maintain their previous levels of harvest. This would award market power to the ITQ owning non-participants, would reward those non-participants who do not contribute to the industry in any way and who have no investment at risk, would reduce the ITQ collateral now relied upon by banks for loans to industry participants, and would increase the cost of producing clam products (because of leasing fees) which would unnecessarily increase prices to consumers – all for the sole purpose of creating new revenue for non-participating ITQ holders who add nothing to the industry, who create no jobs, and who do no more then collect checks for the lease of ITQs that were given to them, for no payment, decades ago.

For these reasons alternatives 5 and 6 should be eliminated from the public hearing draft, as they are market restructuring plans and not excessive share controls.

Here is an illustrative example of how alternative 5 would operate as social engineering/share reallocation rather than as an excessive share cap:

Under alternative 5 the share "cap" would be 40% of total ITQs

Assume an individual owns just 10% of ITQs, well under the cap.

With the 3.4m quota, that shareholder would be entitled to 340,000 bushels of surf ITQs.

But under alternative 5 the shareholder's entitlement would be reduced to 10% of the annualized harvest, about 2.2m bushels, yielding that shareholder only 220,000 bushels of surf ITQs.

Before any class B shares would be made available, under alternative 5 all of the class A shares must be utilized. This would mean that, in order to make up the 120,000 bushels lost under the alternative 5 "quota," the shareholder would be compelled to lease those ITQs from another absentee ITQ holder, not using his or its shares. Note that the price the absentee ITQ holder could extract for those additional shares is completely unregulated.

So simply in order to maintain the same harvest he had previously accomplished (340,000 bu), that shareholder would be compelled to pay – likely hundreds of thousands of dollars – for the lease of 120,000 bu of ITQs from an absentee ITQ holder not engaged in fishing or contributing to the fishery in any way.

The plan document actually approved by the Council in June supposedly offers an analysis of both positive and negative impacts from each alternative. Where is the discussion of negative impacts resulting from the scenario just described? The same scenario will play out throughout the industry if alternative 5 or 6 is adopted, but no analysis of its negative impact is included in the draft.

Instead, the draft rationalizes these alternatives as a means of "aligning market supply and demand." By what authority does the Council have the right to do this? This is simply economic/social engineering – an effort by the Council to reallocate ITQs in a manner that ensures every ITQ holder is guaranteed a market for his/its shares – the "free market" in ITQs which was to be the bedrock of Amendment 8 is totally abandoned.

According to the draft, "aligning supply in the fisheries with market demand may result in more activity in the leasing market." (Draft, p. 18). Alignment of market supply and demand is not a goal or objective of the FMP, nor is stimulating "more activity in the leasing market." These are solely economic objectives, and fishery management may not be based solely upon economic manipulation of the market under National Standard 5. In any event, "alignment of supply and demand" has nothing to do with containing excessive shares.

In fact, alternatives 5 and 6 would work directly contrary to FMP Objective 3 which is to allow the "industry to operate efficiently," that is, to allow "industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry." Alternatives 5 and 6 would introduce expensive and inefficient externalities into the operation of the fishery: actual industry participants, many of whom have invested millions of dollars in acquiring their allocation rights, would have those rights arbitrarily limited by the reduced "Class A" quota scheme, so as to require them to lease quota from non-participants in the industry, in order to maintain their overall level of harvest. The non-participants whose leasehold rights would become necessary for continued operation of the fishery would have participants over a barrel, and would be in a position to extract unreasonable ransoms for the lease of their ITQs by participating harvesters. Put another way, this would create market power – an excessive share – on the part of industry non-participants to whom harvesters would be required to turn to obtain fishing privileges necessary to sustain their prior levels of harvest. Alternatives 5 and 6 propose no means of controlling this monopsony power that would be awarded to the non-participating ITQ owners.

This is not an "excessive share" control mechanism limiting those who participate in the industry, which is the purported intention of the pending amendment. Note that in the example above, **participants who are well below the excessive share "cap"** would nevertheless lose the ability to utilize ITQs in which they had invested, even though by definition they would not have an "excessive share."

Alternatives 5 and 6 work directly in opposition to the production of optimum yield in the clam fishery, and instead will serve to suppress customer demand for and production of the US clam resource. If active harvesters/processors are compelled to lease ITQs from current non-participants, simply to maintain their current levels of production, those leasing costs will substantially increase the cost of the final product – margins now are far too narrow for processors to simply "eat" the additional cost of leased ITQs.

No one on the Council or the staff/FMAT has undertaken any analysis of the economic impact on the current industry participants of imposing what would amount to a new tariff on finished product, by requiring current producers to lease unnecessarily the ITQs of industry non-participants. Accordingly, the economic consequences of this proposed economic restructuring scheme have not been evaluated and it would be highly irresponsible for the Council to push ahead with a program that could wreak such economic hardship, having undertaken no study to consider this outcome in advance.

The primary reason that the non-participating ITQ owners currently are unable to lease all of their shares is that demand for US clam products has declined over the past ten years, largely because more and more such product is being imported from abroad. China is the principal exporter of clam products to the US market, and those exports have seriously damaged domestic sales. Adding an additional cost factor to US clam products – the cost of compelled leasing of non-

participants' ITQ shares by alternatives 5 and 6 – would further increase the cost of the domestic product, opening our producers to even more foreign competition, undercutting our prices. Again, neither the Council nor the staff/FMAT have undertaken any analysis of the extent to which 5 and 6 would promote more clam product importation, reducing the ability of domestic producers to market at current levels and maintain current labor forces.

As a final note, there has been no analysis of the extent to which a reduction in participants' ITQ shares, when those shares are calculated on the basis of the past several years total harvest, would diminish the collateral held by banks whose loans are keeping many industry participants afloat. More to the point, we wonder whether the alternative 5/6 advocates at NMFS have advised and sought the reaction of the related NMFS agency that has substantial outstanding loans to harvesters/fishermen/processors with their ITQ shares as collateral. Will that NMFS department be pleased to have that collateral reduced by some 40% if 5/6 are adopted? The agency certainly should know the answer to this.

II. The Council Should Adopt a Modified Version of 4.3 as Its Preferred Alternative

In the best of all worlds the Council would adopt the status quo – alternative 1 – as its preferred alternative, as this excessive shares control rule has operated successfully for almost 30 years. But GARFO has threatened the Council not to approve any further FMP amendments until and unless the Council adopts a quantified percentage cap for its definition of an "excessive share."

GARFO's threat is and was baseless; the agency has no legal authority to refuse to process FMP amendments for the reason just stated. Nevertheless, the Council explicitly has deferred to GARFO on this point, and will insist that an alternative that imposes a percentage cap is adopted in the end.

So with this background, and recognizing this political reality, Sea Watch is prepared to support a compromise percentage cap defining an excessive share – specifically, a slightly modified version of stated alternative 4.3.

For surfclams, Sea Watch would support a two part cap with an ownership cap of 35%, and a combined cap (ownership plus leasing of annual allocation) of 65%.

For quahogs, Sea Watch support a two part cap with an ownership cap of 40% and a combined cap (ownership plus leasing of annual allocation) of 70%.

It should be noted that under both of the above proposed caps, there will be substantial latitude for the leasing of allocation rights. This should be of significant appeal to those who are pushing to find a means of compelling more leasing of ITQ shares from non-participating ITQ owners. A reduced cap on leasing would work directly against that objective, so what is proposed

here would be in the best interest of not only current active industry participants, but also those who are not participating but who continue to hold ITQ shares for lease.

With regard to the other alternatives under consideration that do not relate to share ownership, Sea Watch supports the following:

ES-2. Summary of excessive shares review alternatives
Alternative 1: No Action

ES-3. Summary of framework adjustment process alternatives.
Alternative 1: No Action

Es-4. Summary of multi-year management measures alternatives.
Alternative 2: Specification to be set for the maximum number of years consistent with the NRCC approved stock assessment schedule.

Thank you for considering the above comments.

Very truly yours,

Thomas T. Alspach, General Counsel
Sea Watch International, Ltd.

TTA/tsd

BUMBLE BEE SEAFOODS

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Chris Moore, Ph.D., Executive Director
Mid-Atlantic Fishery Management Council (MAFMC)
North State Street, Suite 201
Dover, DE 19901

September 3, 2019

RE: SCOQ Excessive Shares Amendment Comments

Dear Dr. Moore,

I am writing to provide Bumble Bee Seafoods (BBS) comments on the MAFMC excessive shares amendment for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (SCOQ FMP). As our company commented during the scoping process, we believe this initiative is driven solely by the need to satisfy a regulatory requirement and is not indicative of any issues within the fishery. The current system, which relies on U.S. antitrust laws, is functioning properly with no evidence that a person or company is capable of market manipulation.

Fishery Management Plan Objectives

In Bumble Bee's July 12, 2017 letter to you, we stated that the company supports the Council's efforts to update the goals and objectives of the SCOQ FMP. We also provided a list of revised/rewritten goals and objectives in that same letter which we believe more accurately reflect today's fishery. We stand by those comments but will not repeat them here.

Excessive Shares

The public hearing document provides a number of alternatives currently under consideration by the Council. Obviously, the affiliate level selected by the Council will result in different outcomes. For purposes of these comments, BBS supports and assumes that the affiliate level will be 100% cumulative ownership.

In our scoping comments, we stated that if the Council moves forward with a numerical cap, it should be set at a level that does not penalize any current active quota holder and allows for additional growth. While we believe alternatives 2.2 (49% ownership cap/unrestricted leasing) and 3.3 (combined cap at 49%) would satisfy those goals, BBS prefers the approach of alternative 4 which provides a two-part cap on quota ownership and a combined quota share ownership plus leasing of annual allocation. We believe this approach better reflects the actual level of engagement in the fisheries by the various companies and would prevent any one entity from accumulating an excessive share of the quota. BBS supports 4.3 (ownership 30%/combined cap 60%) and the modified 4.3 alternative submitted to the Council by the clam industry (35%/70% surfs and 40%/70% for quahogs).

BBS strongly opposes alternatives 5 & 6 and asks the Council to reject them. The stated goal of these alternatives is to align supply in the fisheries with market demand by creating a two-tiered quota system. BBS submits that this goal is contrary to the Magnuson-Stevens national standard #1 for fishery management plans (Sec. 301(a)(1)) which requires conservation and management measures to achieve, on a continuing basis, optimum yield from each fishery. Moreover, by creating two classes of quota shares, alternatives 5 & 6 would force active quota holders to lease quota from non-participants in order to utilize the entire quota they hold. BBS opposes these social engineering alternatives that appear to be designed more to help non-participants in the fishery than to establish an excessive share cap.

I appreciate the Council taking into account Bumble Bee Seafoods' comments and would be happy to provide any additional information you may need.

Sincerely,

Jan Tharp
Chief Executive Officer

Seafish Inc.
10344 Waterview Drive
Ocean City Md. 21842

August 22, 2019

Mid Atlantic Fishery Management Council
800 North State Street
Dover, Delaware 19901

Re: Excessive Share Amendment

Council Members and Staff,

I am Dave Martin, owner of Seafish Inc. who owns surf clam and ocean quahog allocation. We are participants by leasing our quota in full every year. We do not participate in harvest. But we have relied on this yearly income for the past 20+ years.

We have considered the information regarding the Excessive Shares Amendment and the long list of Alternatives being considered for implementation to cap the amount of ownership. The levels of ownership being considered is not so low that it will affect our allocation holdings. But there is concern for the calculation of what would be considered "one" entity. There are few processors anymore because of the nature of the business and the difficulties in the marketplace. So, to keep the ownership plus leasing cap too low would put in jeopardy our ability to continue to lease our allocation year to year. We recommend giving the largest percentage possible to continue to give room for us to lease our quotas.

We are opposed to Alternative 5 and 6 as they will have severe negative impacts on our income and the industry. These Alternatives aim to split the quota into A and B shares. The A shares will be handed out based on the level of harvest on the last few years. This will be devastating to us. The A shares will be approximately 65% of what we have normally been receiving. The marketability of clam is limited for the foreseeable future due largely to it being an ingredient and not a center of the plate item. The other reason is the large amount of imports that are allowed into our country diminish the ability to sell more. This means that the B shares may not be handed out in the foreseeable future for us to lease and receive the remainder of our income.

Its shows that the purpose is to increase activity in the leasing market, but the result will be nothing more than a loss of income for many quota holders that were given the opportunity reduce their harvest capacity years ago by the implementation of transferable quotas. There is no reason for this and 5 and 6 should not be chosen.

Thank you for the opportunity to express our public comments.

Dave Martin
Seafish Inc.

Woodrow Laurence Inc.

12310 Collins Rd.
Bishopville, Md. 21813

Mid Atlantic Fishery Management Council
800 North State Street
Dover, Delaware 19901

Re: Excessive Share Amendment

August 22, 2019

Council Members and Staff,

I am Steve Martin, owner of Woodrow Laurence Inc. a holder of surf clam and ocean quahog quota. We were originally harvesters with vessels but do not currently harvest. We are quota holders that lease our quota every year. We took the opportunity to be able to sell our vessel some years after the ITQ system started and we have been relying on the income from leasing our quota every year since. Now that we are in the public hearing process for the Excessive Shares Amendment, we appreciate the opportunity to speak out, mostly against the implementation of Alternatives 5 and 6.

First though, we disagree with the implementation of an excessive share cap at all. There have been no monopolies in the fishery, either from the marketing end or the harvest and tag leasing sector. There is no impediment to access the fishery from any perspective. The value of the product is low in the marketplace as it is an ingredient in meals, largely diminished by imports from other countries.

Our company will not be in jeopardy of being over any share caps described in the Alternatives. Although we do rely heavily every year on the few processors that there are for the industry that could be affected by them. If the affiliations as describe in the document are too constraining on the current processors, we may have no place to lease and/or sell our quota in the future. We propose Alternative 4.3 as having the most flexibility for the processors and those of us that are leasing our quotas. We would much rather 2.3 at 95% but that may not meet definitions that are needed to move forward.

If alternative 5 or 6 are chosen it will be devastating to those that are leasing all their quota now, as it proposes to split the allocation each year into A and B shares. The A shares given out at the levels of harvest in recent years and the B shares given out when the A shares are harvested. In the current marketplace this amounts to nothing more that reducing our income up to 40% as the market cannot handle anymore product. The B shares in the foreseeable future will not be let out of the NOAA office. All quota holders will be given this cut. The document says the reason is to increase activity in the leasing market, yet it has never been stated how many bushels go unleased a year to show if there is a problem. Without that information how can it be stated whether 5 and 6 will have benefit?

If Alternative 5 and 6 is designed for a minority number of bushels that go unleased every year to get leased in a free market system, then this is nothing more than social engineering that will not help he industry as a whole, it will only damage it and likely beyond repair for most of us.

Please do not choose Alternative 5 and 6.

Thank you for the opportunity to comment.

Steve Martin
Woodrow Laurence Inc.

Sea Watch International, Ltd.

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September 9, 2019

Chris Moore, Ph.D.,
Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901

Dear Dr. Moore,

Please accept these comments on behalf of myself and Sea Watch International, Ltd in regard to the Excessive Shares document currently out for public comment which were presented during the Public Hearing in Salisbury, MD September 9, 2019.

I have lifted a page from the Magnuson Stevens Act reauthorization of 2007 to make the point that alternatives 5 & 6 are in direct violation of National Standard (5) and (8). I have highlighted National Standard (5) and parts of National Standard (8) below to substantiate this statement.

Alternatives 5 & 6 will reallocate the quota system in a purely economic manner because its goal is to "align supply in the fisheries with market demand". This can only be described as a measure resulting in economic allocation which is exactly what National Standard (5) disallows. There is no scientific reasoning behind this type of reallocation in a fishery that has been well managed for 29 under the current ITQ system.

16 U.S.C. 1851 MSA § 301 58 TITLE III—NATIONAL FISHERY MANAGEMENT PROGRAM SEC. 301. NATIONAL STANDARDS FOR FISHERY 16 U.S.C. 1851 CONSERVATION AND MANAGEMENT (a) IN GENERAL.—Any fishery management plan prepared, and any regulation promulgated to implement any such plan, pursuant to this title shall be consistent with the following national standards for fishery conservation and management: 98-623 (1) Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry. (2) Conservation and management measures shall be based upon the best scientific information available. (3) To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination. (4) Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.
104-297

(5) Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.

(6) Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches. (7) Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication. 104-297, 109-479 (8) Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

I would also like to draw your attention to National Standard (8) (A) & (B). Alternatives 5 & 6 will have adverse impacts on fishing communities which have developed over years and provide thousands of jobs in the SC/OQ. Alternatives 5 & 6 will have direct negative impacts on jobs by raising processors cost structures, prices to the US consumer and the loss of US JOBS to cheap imports.

We live, work and provide jobs in a capitalist society and if that is a dirty word to you, I am sorry I cannot apologize for that. Let the process work, as strong processors develop more demands here at home and abroad the need for the excess ITQ's will be in high demand. Might I remind you that thousands of bushels are being leased every year by the very processors that alternative 5 & 6 will decimate. The SC/OQ Fishery will not thrive and grow and will be lucky to survive this type of overbearing regulation if Alternatives 5 & 6 are adopted.

Here is a tidbit for you, through August 31, 2019 Sea Watch International has exhausted all of the ITQ's owned by its owners. Every clam that crosses our docks from September 4 to December 31, 2019 will be leased tags from some Absentee ITQ holder.

Sea Watch would support Sub Alternative 4.3 with a slight modification.

Surfclams
Two-part cap with an ownership cap of 35% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 65%.

Ocean Quahogs
Two-part cap with an ownership cap of 40% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 70%.

On behalf of myself and Sea Watch International, Ltd. we appreciate the opportunity to comment on this very important decision to be made that could have devastating ramification for our company and industry if Alternatives 5 or 6 are recommended.

Regards,
Sea Watch International, Ltd.

Guy B Simmons

Guy B Simmons
Sr. VP Marketing, Product Development
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September 10, 2019

Dr. Christopher Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201,
Dover, Delaware 19901

Dear Dr. Moore,

Please accept these comments on behalf of myself and Sea Watch International, Ltd. regarding the proposed Atlantic Surfclam and Ocean Quahog (SCOQ) Excessive Shares Amendment.

The range of alternatives under consideration 1 through 4.3 seem to provide a reasonable range of options consistent with the stated charge of a fisheries management council in implementing an excessive shares cap for an Individual Transferable Quota (ITQ) fishery.

The incremental actions proposed by Alternative 5 and Alternative 6 in creating classes of quota go above and beyond the stated charge of what is reasonably required by the Council to bring the SCOQ Fisheries Management Plan (FMP) in compliance with the Magnuson-Stevens Act (MSA) and ensure that the SCOQ fishery continues to be properly managed employing the best available science. The thrust of these comments will provide rationale behind why I believe Alternatives 5 & 6 are problematic to the process. Since identifying a problem would be incomplete without proposing a solution, I will also conclude these comments with the recommendation of a preferred alternative that I believe satisfies the stated objective of this amendment. It is imperative that management measures continue to foster growth and efficiency in the industry and interrelated sectors, support the optimal yield targets to encourage production of SCOQ products in an emerging globally competitive food business, and yet do not unnecessarily introduce uncertainly to the process.

Since the Alternatives 5 and 6 propose to go above and beyond what is required to bring the SCOQ FMP in compliance with MSA, the incremental activities of creating classes of quota to sort participation from non-participation appears to be solely economic in nature. Measure that have economic allocation as its sole purpose violate National Standard #5.

The Scientific and Statistical Committee (SSC) Comments on the SCOQ Excessive Shares Amendment, which is Attachment 3 to the Report of the May 2019 SSC Meeting, proposes to offer economic rationale for inclusion of Alternatives 5 & 6. I find that both the structure and specific arguments are problematic. The mere arrangement of the document is problematic

because the need for quantitative economic research upon which to identify potential effects is identified AFTER drawing the conclusions about market power that underpin the argument for inclusion of Alternatives 5 & 6. This structure of putting results ahead of proper research either 1) falls short of supporting the basic scientific method or 2) renders statements regarding monopoly, monopsony, and market power as mere hypotheses. As the SSC is considering to undertake a greater role in the economic and social sciences to support the Council's role in fisheries management, I hope that the scientific rigor employed by the SSC in the economic and social sciences is conducted to the same high standards employed in the execution of science that supports the setting of Acceptable Biological Catch.

Secondly, the arguments put forth do not appear to be supported by previous work conducted to better understand the history and current status of the SCOQ ITQ. The statement that the "very existence of non-participating ITQ owners is proof of monopsony power" is a reckless statement. Nothing presented in the body of academic and informal study of this excessive shares issue rises to the level of "proof." Inclusion of Alternatives 5 & 6 appear to be an attempt to resolve an unsubstantiated problem because the CIE reviewers do no concur that monopsony power actually exists. Rather than drawing a conclusion of "proof" of the monopsony power, a plausible explanation is that demand market signals from consumers and buyers of SCOQ products are passing through processors upstream to harvesters and ultimately to ITQ holders.

The Public Comment document also contains certain misrepresentations to support the incremental aspects of Alternatives 5 & 6 over and above establishment of an excessive shares cap. The document seems to suggest that an objective to "align supply in the fisheries with market demand" is a recurring theme among Mitchell et.al (2011) and subsequent CIE reviews and summaries. None of these references include language that is remotely close to this statement, nor is any recommendation made in this regard. There are ample references to supply and demand, but these are principally used to develop hypothetical scenarios to help the reader gain a better understanding of market power or price elasticities in an absence of empirical data to support any specific conclusion. Furthermore, with the influence of foreign imports that compete directly with domestic products derived from SCOQ (which are described below), it is well outside of the purview and ability of the Council to hope to align supply and demand and should therefore be abandoned by the Council as a goal for this fishery.

Northern Economics, Inc. (2019) describes SCOQ products as "highly inelastic" (p. 26), but does not offer any evidence to support this statement. The description of SCOQ products as "highly inelastic" appears to be incorrect. Mitchell and Peterson (2013) provide a hypothetical example of quota withholding (p. 16) that would require high price inelasticity which was deemed to be outside an expected range of the Northeast Multispecies Fishery. Furthermore, Mitchell et.al. (2011) report (p. 25) that "domestic clam processors face elastic demand for at least some significant portion of their products." CIE reviewers also cite evidence that suggest that clam products are likely more elastic than inelastic (Arnason p. 24, Lopez p. 9)

What is clear from these analyses is that actual price elasticities of supply or demand have not been determined for SCOQ products (Kachova p. 9). However, one dynamic that can be assumed is that price elasticities become more elastic over time (Goodwin, et al., 2009), a notion which is also identified by CIE reviewer Kachova (p.7). Any alternative that is ultimately

selected will have long-term impacts on the SCOQ fishery. An unintended consequence is that these impacts can exceed natural market cycles. Table 4 of the Public Comment document (p. 69) provides the most recent times where an excess of 90% of the quota was harvested. For surfclams and ocean quahogs, 2007 and 2004, respectively, were the last occurrences of observed near full quota utilization. SCOQ products compete in a changing marketplace that will continue to evolve. SCOQ products can reasonably be expected to continue to trend toward greater elasticity, with increasing supply pressure form imports placing downward price pressure on SCOQ products.

The influence of imports is identified in Mitchell et.al. (2011) and by subsequent CIE reviews (Katchova p. 9, Lopez p. 11) as an important consideration in understanding the broader marketplace in which domestic clam products complete. Because these data from several years ago may be somewhat dated, it is important to provide recent import data to further elucidate this effect on clam products that are likely more elastic than inelastic and have a greater tendency toward increasing elasticity over time. Imports of competing clam products have a high degree of direct substitutability of many domestic clam products and grew 17% from 2014-2018 with an average annual growth of 4.3% (FAS, USDA, 2019). The growing degree to which we see imported clam products in the marketplace indicates growing supply to the overall marketplace in which domestic clam compete. The result of policy decisions that do not properly account for the impact of imports have overall negative implications for the domestic SCOQ processing and harvesting sector. The negative repercussions for the upstream and downstream businesses sectors would be especially magnified due to the notable high economic outputs and impacts reported by Murray (2016) for SCOQ landings. Combined landings in 2014 of $54.873 million resulted in an economic multiple of 11.4x and a total economic output of $1,308 million.

One recurring recommendation of the reviewers (Arnason p. 4, Lopez p. 15) of Mitchell et.al. (2011) was that gains in market efficiency through consolidation need to be weighed against efficiency losses that could result from an inappropriate cap. It is through market participation that efficiency gains are realized. Alternatives 5 & 6 seem to clearly disregard any consideration of market efficiency because the incremental activity of these alternatives rewards willful non-participants at the expense of active participants. In fact, woeful bias for social experimentation and related disregard for market efficiency is seen in the Public Comment document where Alternatives 5 & 6 are identified as having the largest positive impact. Furthermore, and of notable importance regarding active participation, is the citation of 55 Federal Register 24184 (p. 78) of the Mitchell et.al. (2011), where the authors describe the Council's desire not to unjustly enrich non-active participants in the fishery at the onset of the ITQ program.

Now that the cost-recovery amendment is in place, it has not been adequately addressed what effect any excessive share decision will have on the cost-recovery requirements for the SCOQ fishery. The most complex alternatives such as Alternatives 5 & 6, will presumably result in highest monitoring and enforcement costs, which will presumably be subject to cost recovery. Because recoverable costs are based on fished quota and those costs are paid by holders of active quota only (Potts, 2019), this will be disproportionately harmful to active quota holders.

Excessive share caps for other US fisheries managed under an ITQ system are described on p. 201-202 of the public comment document. None of these fisheries appear to feature a tiered

quota system as prescribed in Alternatives 5 & 6. As I have mentioned before, this tiered quota scheme amounts to an experimental measure that is not rooted in empirical study and will introduce an unacceptable risk to a well-managed fishery.

Reinforcement of the inclusion of Alternatives 5 & 6 in the Excessive Shares Amendment is, at best, supported by hypothetical conclusions about the SCOQ business environment. In some cases, the underpinnings for maintaining Alternatives 5 & 6 are simply not supported by Mitchell et.al. (2011), the subsequent CIE reviewers, and Northern Economics, Inc. (2019). A summary of points in these comments are as follows:

- Alternatives 5 & 6 go beyond what is stated to be required by the Council to establish an excessive share limit on the SCOQ fishery.
- In going above and beyond the core stated purpose and being solely for economic purpose, the incremental measures violate National Standard 5.
- Alternatives 5 & 6 propose to benefit those who made willing business decisions to divest from active fishery status and remain inactive. These measures would be implemented at the expense of many other active participants in the SCOQ fishery who have invested in in improving operational efficiency, market development, the scientific advancements in understanding the biology of surf clams and ocean quahogs and their surrounding ecology, and collaborative management of these fisheries over many years.
- Alternatives 5 & 6 are not only novel to US Fisheries management, but also not based on best available science. They introduce the greatest amount of uncertainty to the FMP and cost to the active SCOQ industry participants.
- The incremental effect of Alternatives 5 & 6 amount to a natural experiment involving ITQ holders as test subjects participating in a fishery that is already deemed to be well-managed based on the core biological and management fundamentals of fishery management.
- The economic conditions that Alternatives 5 & 6 aim to remedy are at best hypothetical and the interpretation of economic principles that underpin augments for Alternatives 5 & 6 are in some cases blatantly incorrect.
- Given the tendency of products to move toward greater elasticity over time, and the understanding that any decision on a limit of excessive shares likewise has long-term implications on the management of the SCOQ fishery, Alternatives 5 & 6 have the real potential of placing at a disadvantage domestically harvested and processed products from surfclams and ocean quahogs to the advantage of the growing availability of imported clam products in the US marketplace.

Sea Watch strongly opposes Alternative 5 and Alternative 6.

Sea Watch would support Sub Alternative 4.3 with a slight modification.

- Surfclams
    - Two-part cap with an ownership cap of 35% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 65%.
- Ocean Quahogs
    - Two-part cap with an ownership cap of 40% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 70%.

Alternative 4.3 with modification serves the core stated purpose of bringing the SCOQ FMP into compliance with National Standard #4 without creating a subsequent non-compliance issue with National Standard #5, and allow management measures to proceed with the best available science.

Sea Watch would support the following.

- ES-2. Summary of excessive shares review alternatives.
  - Alternative 1: No Action
- ES-3. Summary of framework adjustment process alternatives.
  - Alternative 1: No Action
- ES-4. Summary of multi-year management measures alternatives.
  - Alternative 2: Specifications to be set for the maximum number of years consistent with the NRCC approved stock assessment schedule.

Thank you for the opportunity to comment on the proposed Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment.

Sincerely:

Joseph J. Myers
Director, Marine Innovation and Technology

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MARTIN FISH COMPANY LLC
12929 Harbor Road
Ocean City Md. 21842

August 22, 2019

Mid Atlantic Fishery Management Council
800 North State Street
Dover, Delaware 19901

Re: Excessive Share Amendment

Council Members and Staff,

I am John R. Martin, General Manager of Martin Fish Company LLC an off loader in Ocean City MD. We do not participate in the harvest however we have been offloading seafood products at our dock facility for over 40+ years including surf clams and quahogs.

We have considered the information regarding the Excessive Shares Amendment and the long list of Alternatives being considered for implementation to cap the amount of ownership. There are few processors anymore because of the nature of the business and the difficulties in the marketplace. We recommend giving the largest percentage possible to continue to give room for leasing and flexibility in the business.

We are opposed to Alternative 5 and 6 as they will have severe negative impacts on in the industry. These Alternatives aim to split the quota into A and B shares. The A shares will be handed out based on the level of harvest on the last few years. This will be devastating to the industry. The A shares will be around 65% of what normally has been received.

The clam market is limited for the due to it largely being an ingredient. The importing of cheaper products allowed into our country also diminish its marketability. This means that the B shares may not be handed out in the future for lease and thereby decreasing potential unloading income.

Alt 5 & 6 show that their purpose is to increase activity in the leasing market, but the result will be loss of income. There is no scientific or economic reason for these two alternatives therefore 5 and 6 should not be chosen.

We support alternative 4.3 and after review we also support 4.3 with the adjustments suggested by industry and stakeholders.

Thank you for the opportunity to express our public comments.

John R. Martin
Martin Fish Company LLC

16 Broadcommon Road-Bristol, RI 02809
TEL. (401) 253-3030

Chris Moore, Ph.D., Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901

August 02, 2019

Dear Chris Moore,

Thanks to you and your staff for the opportunity to comment on Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment Public Hearing Document at the Thursday August 1st 2019 meeting in Cape May.

My name is Chris Shriver General Manger Galilean Seafoods Bristol, Rhode Island. Galilean employs over 100 people throughout its supply chain; from harvesting effort, vessel management and maintenance, processing, sales & marketing and distribution. We have great concerns regarding some alternatives being presented in this public hearing document.

Alternative 5 and 6, specifically would have tremendous negative impacts on our ability to be profitable and stay in business. They are in part designed to increase the leasing activity of quota holders that do not have anyone to lease to. It is implied that the current active participants in the fishery purposefully do not catch all the quota thereby do not need to rent the non-active quota holders tags. This could not be further from the truth. We would catch all the quota if the markets demanded it. There are several reasons causing this but allowing imports to compete with our domestic production drives market demand down is a major factor.

Alternative 5 and 6 would split the quota in such a way that it would force the leasing of quota at uncontrolled prices before we could even utilize our own owned quota. Our company has little need to lease quota but these alternatives would cause us to not have utilization of up to 40% of our owned tags and lease quota, that of which may not be available because all quota holders will have had the same reduction in available quota. We would then have to shut the doors and put everyone on the unemployment line waiting the market demand to increase to get the B share of our allocation.
It is nothing more than social engineering that favors a very small subset of the quota holders while admittedly, giving negative financial impact to the active participants. Reducing leasing activity overall rather than increasing it.

Excluding alternative 2.3, alternatives 2.0-4.2 could create negative impacts by diminishing the ability for growth in ownership by the stated ownership caps or the inability to consolidate companies for financial strength.

Alternative 4.3 could have the least impact to our company and the industry in general. It gives room for expansion in ownership and can increase leasing activity.

We would like to propose an adjustment to Alternative 4.3:

- Surf Clams the ownership cap of 35% and overall cap with leasing included 65%
- Ocean Quahogs the ownership cap of 40% and overall cap with leasing included 70%

Thank you again for your consideration in this matter.

Best,

Chris Shriver
General Manager
Galilean Seafoods
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Bristol, RI, 02809

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September 10, 2019

Chris Moore, Ph.D.,
Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901

Dear Dr. Moore,

Please accept these comments on behalf of myself and Sea Watch International, Ltd in regard to the Excessive Shares document currently out for public comment which were presented during the Public Hearing in Warwick, RI September 10, 2019.

My comments during this session will detail the contributions by Sea Watch International as an Active ITQ Participants in stark contrast to the contribution made by Absentee ITQ Participants. I am currently the Chairman of the National Fisheries Institute Clam Committee and serve on the Industry Advisory Board for the National Science Foundations Science Center for Marine Fisheries as well as former Chairman of the IAB for SCeMFiS. Since these two organizations are the primary means for cooperative science dollars for the SC/OQ fishery I feel I am qualified to comment on who is participating and who is not.

The current ownership of Sea Watch International has been in place since 1999 and has invested millions upon millions of dollars towards Cooperative Science, Marketing, Education, Sustainability and the Global expansion of the SC/OQ Fishery. The detailed investment below is related to Sea Watch International only, however the vast majority of harvesters and processors in the SC/OQ Fishery contribute in similar ways.

At the public hearing in Salisbury, MD September 9, 2019, Mr Bob Brennan of Sea Watch International mentioned numerous capital expenditures made by Sea Watch over the past decades. The information below details some but not all of Sea Watch's expenses over the past decades to promote the SCOQ fishery.

Sea Watch Non Capital Investments 1999 – 2019

National Fisheries Institute – Membership Fees **$639,019**
(The National Fisheries Institute is a non-profit organization dedicated to education about seafood safety, sustainability, and nutrition).

NFI Clam Committee – Cooperative Science **$1,259,433**

National Science Foundation, SCeMFiS – Cooperative Science **$275,000**

Georges Banks PSP Protocol FDA and ISSC **$2,000,000**

Marketing **>$50,000,000**
Advertising, Trade Shows, Distribution programs, Slotting Fees, Training, Education, Sustainability, Global Expansion (Exports)

Fisheries Participation – This is hard to put a price tag on because from the very first Council meeting held back in 1978, Sea Watch International was represented and has been actively involved in the development and growth of the SC/OQ fishery. Sea Watch and other active participants have brought worldwide recognition to the SC/OQ Fishery by seeking MSC Certification in 2016. This was done at zero cost to the taxpayer and might I add, zero cost to the Absentee ITQ holders.

Absentee Contribution 1999 – 2019 **ZERO DOLLARS**

Sea Watch would support Sub Alternative 4.3 with a slight modification.

Surfclams
Two-part cap with an ownership cap of 35% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 65%.

Ocean Quahogs
Two-part cap with an ownership cap of 40% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 70%.

On behalf of myself and Sea Watch International, Ltd. we appreciate the opportunity to comment on this very important decision to be made that could have devastating ramification for our company and industry if Alternatives 5 or 6 are recommended.

Regards,
Sea Watch International, Ltd.

Guy B Simmons

Guy B Simmons
Sr. VP Marketing, Product Development
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September 13, 2019

Chris Moore, Ph.D.,
Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901

Dear Dr. Moore,

As the public comment period closes on the Excessive Shares Amendment I feel compelled to weigh in on something that I personally find offensive to say the least. As I am sure you are aware Mr. Tom Alspach representing Sea Watch and a number SCOQ industry members on this point specifically sent a letter to Chairman Luisi. In this letter Mr. Alspach requested that Chairman Luisi call back the Public Hearing on Excessive Shares in the SCOQ Fishery document that was put forth August 1, 2019. The reasoning behind this request was the substantial changes made to the original document that was approved by the full Council at the June meeting.

I am sure that I do not have to inform you of Mr. Luisi's response, and I am aware that the staff may have the authority to make changes to an approved document that might reflect discussions had by the Council during the approval process. I was at the Council meeting in June and the only point that I recall the staff being asked to change was the HHI chart which was based on data from 2011 and staff was told to recalculate the chart using new data up to 2016. I do not recall instructions from the head table to add a substantial amount of additional comments made by Lee Anderson that were not included in the original SSC document from the May meeting, which is precisely what happened. Not only were these additional pages added but they made severely inaccurate assumptions presumably based on the Northern Economics report and the Lexicon report. These assumptions are not conclusions from studying the research in these documents but the opinions of one man who appears to have an agenda against the SCOQ Fishery which astonishes me when this same man, Lee Anderson was the architect of Amendment 8 in the first place. I hope you will pay close attention to the report submitted by Dr Tom Sprouls from the University of Rhode Island which points out severity of these non-conclusive assumptions made by Lee Anderson.

These are self-proclaimed opinions of mine and I am no lawyer, but Sea Watch has been represented by a fine one for over 40 years. Because of the gross mis representation of facts aloud to remain in this PHD, Sea Watch along with many other members of the SCOQ Fishery have retained the services of Kelley Drye as I am sure you are also aware. I do not know the outcome of this process, but I certainly hope that it does not require litigation because that is not money that anyone of us in the SCOQ Fishery can afford to spend but then again cannot afford not to spend.

Sea Watch would support Sub Alternative 4.3 with a slight modification.

Surfclams
Two-part cap with an ownership cap of 35% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 65%.

Ocean Quahogs
Two-part cap with an ownership cap of 40% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 70%.

On behalf of myself and Sea Watch International, Ltd. we appreciate the opportunity to comment on this very important decision to be made that could have devastating ramification for our company and industry if Alternatives 5 or 6 are recommended.

Regards,
Sea Watch International, Ltd.

Guy B Simmons

Guy B Simmons
Sr. VP Marketing, Product Development
Government Relations and Fisheries Management

Dr. Christopher Moore

Dr. Jose Montanez

Mid-Atlantic Fishery Management Council

800 North State Street, Suite 201

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September 12, 2019

"SC/OQ Excessive Shares Amendment Comments"

Dear Drs. Moore and Montanez:

I wish to provide these comments on the Scoping Document entitled, "Surfclam and Ocean Quahog Excessive Shares Amendment" which was presented during 4 public hearings between August 1 and September 10, 2019. Representatives of our companies made oral comments during the hearings and now I simply wish to reiterate some of those comments in writing.

I am advising a number of surfclam and ocean quahog companies through Wallace & Associates. Our company represents most of the surfclam and ocean quahog fisheries and they all strongly agree that while this Amendment is totally not needed, they have come to a compromise in support of Alternative 4.3 with minor modifications to the proposed percentages. This issue of "excessive shares" has been a conundrum and a morass sucking time and resources since its initiation. I can tell you that I have never seen the clam industry so united and opposed to one idea as they have since the beginning of the issue of excessive shares.

The genesis of this excessive share issue dates back to a 2002 Government Accountability Office (GAO) report that assessed existing ITQ programs and ways they could be improved. The GAO issued a favorable report regarding how existing ITQ programs were working and included several recommendations for the future, one of which related to the definition of an "excessive share". "To help prevent an individual or entity from acquiring an excessive share of the quota in future IFQ programs, (emphasis added) NMFS recommend that the Secretary of Commerce require regional fishery management councils to define what constitutes an excessive share for the fishery." The GAO plainly was not directing this recommendation to preexisting ITQ programs, such as the surfclam and ocean quahog FMP, but instead only to new ITQ programs adopted in the future.

These two fisheries were the first ones in this country managed under the Magnuson Act with the development of an FMP in 1977. The industry needed federal involvement because they had overfished the surfclam resource. In the past 40 years, the surfclam resource was quickly rebuilt and the resources have never been overfished nor has overfishing occurred since the initiation of management. The first 13 years of management was hellacious with draconian government

micromanagement. Fishing effort was limited to as little as 24 -- six hour days a year. Then in 1990, ITQs were implemented and the fishery went from one of the most intensely micromanaged to one where industry meets with the Council and the Agency only once or twice a year. This fishery is successful without government intrusion.

As I stated above, the majority of industry participants now believe, that if there must be an excessive shares definition, they could live with Alternative 4.3 with some minor modifications to the proposed percentages. The majority of industry believes that for surfclams the ownership cap should be 35% and the total should be 65%. For ocean quahogs, the ownership cap should be set at 40% and the total should be 70%. Industry believes the individual/business should be used in the regulations and that the calculations should be based on the New Actual Percentage model. This is a major compromise on industry's part!

In the spring of 2009 the Council held Scoping meetings on an Amendment that included this issue of "excessive shares". That Scoping document had three Alternatives: A) No Action, B) Implement a % Share Cap – with sub-alternatives of 1) 22%, 2) 33%, 3) 50% and 4) 70%, and then C) Adopt DOJ Horizontal Merger Guidelines. From those entire Scoping meetings in 2009, there was only ONE written comment that supported a 50% share cap. EVERYONE else that orally provided comments or provided them in writing supported the No Action alternative. Everyone argued that the dependence on Amendment 8 antitrust regulations were sufficient. As I said in the above paragraph, industry's support for Alternative 4.3 with the minor modifications to the proposed percentages is an absolute amazing compromise for the majority of the industry.

I would just like to say a few words on the Objectives. Please do not change ONE word! Those Objectives were developed over nearly a year by some of the "Forefathers" of fisheries management (Drs. Lee Anderson, Bill Hargas and State Directors Peter Jenson and Russell Cookingham) for Amendment 8. Nearly every word was fought over by the Council. Those 4 Objectives have been the guiding force for the regulation of these resources and fisheries for nearly 30 years. They are the basis for the Council's flagship FMP and one that the rest of the country often attempts to emulate. Amendment 8's Objectives have allowed consolidation decisions and all other business decisions to be made efficiently by businessmen. They have been flexible and adaptable. The have minimized government regulations as well as private costs of this management system. The Objectives and thus, the rules that businesses have been operating under should not be changed at all now.

Finally, I wish to address the items that are up for frameworking. There is absolutely NO way that the excessive share percentages should be frameworked! The issue of excessive shares has been fought about for 17 years now and only with an extremely generous offer from the majority of industry does it appear that headway can be made and this issue may be put to rest. Two Council meetings, in order to change the percentages now, is ludicrous. Seventeen years to get to this point and now changes can be made through two meetings?? That is certainly not the way to build trust and partnership. In fact, there is nearly total distrust between the industry and staff.

The Magnuson Act calls for transparency and partnerships in working towards conservation goals. While there are no conservation improvements with this Amendment, that does not preclude working together for the benefits of the resources and the fishermen. I have not seen as much animosity between an industry and staff since the heydays of summer flounder management 30 years ago. The industry believes the staff has their own agenda (witness the 15 pages of rationale for social engineering that was provided by staff between the Council-approved May hearing version and the July version) and is way overstepping their authority in making policy for the Council. There should be no additional frameworked management measures at this time.

In summary, I fully support the industry participant's position on Alternative 4.3 with the minor modifications to the proposed percentages. Industry supports an ownership cap of 35% and the total should be 65% for surfclams. Industry believes that for ocean quahogs the ownership cap should be 40% and the total should be 70%. There is no reason for a change in any of the Objectives. No additional management measures should be suggested for frameworking at this time. The industry, NMFS, and the Mid-Atlantic Fishery Management Council (MAFMC) have successfully operated these fisheries efficiently and cooperatively since implementation of the ITQ allocations in 1990. This fishery management system is NOT broke. Please don't go backwards to the days of government micromanagement with it.

Thank you for your consideration of these comments. Please do not hesitate to contact me should you have any questions.

Sincerely yours,

Thomas B. Hoff Ph.D.

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Quality Is a Family Tradition
LaMonica
SINCE 1923
"Home of the Hand Shucked Clam"

September 13, 2019

Dr. Christopher Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 19901

RE: SCOQ Excessive Shares Amendment Comments

Dr. Moore:

LaMonica Fine Foods (LFF) appreciates the opportunity to comment on the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, adding to the administrative records, written comments that were orally made at the Cape May Public Hearing on August 1, 2019.

The Mid-Atlantic Fishery Management Council (MAFMC) insists that a percentage cap has to be defined for the Surfclam and Ocean Quahog Individual Transferable Quota (SCOQ ITQ) fishery in accordance with National Standard 4 of the Magnuson –Stevens Fishery Conservation and Management Act (MSA) and has offered six excessive shares alternatives to meet that end. Additionally, the MAFMC has proposed three excessive shares review alternatives within the same public hearing document that deserve commenting and consideration from an industry point of view for future years.

From the outset, starting with the April 2019 MAFMC Meeting, it became apparent through comments from MAFMC leadership and staff, NMFS staff, and members of the Surfclam and Ocean Quahog Committee that two of the six excessive shares alternatives would not be acceptable to the National Marine Fisheries Service (NMFS), namely Alternative 1, No Action/Status Quo and Sub-Alternative 2.3, Quota Share Cap at 95%. The surfclam and ocean quahog ITQ holders (hereafter referred to as the "clam industry") were encouraged to examine the remaining alternatives and come to a consensus agreement of an alternative to define excessive shares. The clam industry, recognizing the coercive actions of both the MAFMC and the NMFS did come to an agreement on a modified version of Alternative 4.3, a two-part cap approach, ownership, leased shares, and total shares on an annual basis, according to the following table:

Modified Alternative 4.3, Two-Part Cap, Ownership, Leased, and Total

	Ownership Cap	Leased Cap	Total Annual Cap
Surfclams	**35%**	**30%**	**65%**
Ocean Quahog	**40%**	**30%**	**70%**

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The clam industry has operated in good faith in agreeing to a definition of excessive shares that accomplishes what the MAFMC and the NMFS maintain is necessary under National Standard 4 without causing any significant harm to current, participating shareholders that have actively invested in the clam industry over the past decades from when Amendment 8 was implemented. The clam industry has acted in good faith with the MAFMC and the NMFS to satisfy requirements under National Standard 4.

However, the MAFMC further maintains that, while there must be a definition of an excessive share, it is also considering social concerns for fishing communities, as expressed in MSA National Standard 8 – which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country. This aspect of the excessive shares amendment expands into economic and social aspects of the clam industry that neither the MAFMC, nor the NMFS, fully understand, and the result of their considered actions would encumber the clam industry with a form of social engineering that has no part in the development of a definition for an excessive share.

The clam industry specifically objects to Alternatives 5 and 6 which would be disasterous for the currently well managed clam industry. These two alternatives in the Draft Public Hearing Document, Alternatives 5 and 6, in our estimation, appear to violate National Standard 5, wherein the alternatives are in essence a social engineering mechanism to facilitate entry into the fishery, of currently unused/unfished allocations, that would replace existing industry affiliated allocations (owned and/or leased), and in fact could very well allow these new shareholders the economic upper hand in controlling a price for their use! This anticipated practice, should either Alternative 5 or 6 be adopted, would not only re-arrange the existing use of owned or leased shares, rendering the fishery less efficient, but also put market power in the hands of shareholders that are currently unengaged in the SCOQ ITQ fishery.

Whereas the MAFMC is quick to reference National Standards in the public hearing document to justify their social and economic objectives, the clam industry would like the MAFMC to consider another part of the MSA, National Standard 5 – Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; **except that no such measure shall have economic allocation as its sole purpose.**

Alternatives 5 and 6, in our estimation, appear to violate National Standard 5, and should be completely rejected.

LFF sees these unintended consequences in both Alternatives 5 and 6 whereby those shareholders (owned or leased) that have invested in the SCOQ ITQ fishery since Amendment 8 was implemented could very well be replaced by unengaged shareholders who have not invested

in the fishery. National Standard 5 does not allow for a conservation and management action to have as its sole purpose, the economic allocation that Alternatives 5 and 6 appear to create. Defining an excessive share in the SCOQ ITQ fishery and demonstrating that a certain cap percentage is exerting market power, are difficult objectives in and of themselves. Considering Alternatives in the public hearing document that have nothing to do with defining excessive shares but rather serve as a redistributing/reallocation ITQ rights mechanism should not be selected for implementation.

The public hearing document for excessive shares also includes less obvious but equally important issues on future management practices following the implementation of the excessive shares amendment.

At **Box ES-2. Summary of the excessive shares review alternatives**, the clam industry supports **Alternative 1: (no Action/Status Quo)**-There would not be a requirement for periodic review of any implemented excessive shares measures, as could be done through a Framework. This excessive shares amendment has been over 10 years in the making and to allow for periodic review through a Framework Adjustment cannot be justified, based on the need for long term stability in the clam industry.

At **Box ES-3. Summary of the framework adjustment process alternatives**, the clam industry supports **Alternative 1: (No Action/Status Quo)**, No changes to the list of management measures that can be addressed via the framework adjustment process.
At **Box ES-4. Summary of the multi-year management measures alternatives**, the clam industry supports **Alternative 2: (Allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule).**
Lastly, this excessive shares amendment would allow the MAFMC to revise the management goals and objectives of the Atlantic Surfclam and Ocean Quahog Fishery Management Plan that have served the industry and management of these two important resources well since the Implementation of Amendment 8 when the SCOQ ITQ System was developed. **The clam industry sees no need to revise any of the goals and objectives implemented through Amendment 8 and questions why the MAFMC would want to revise a system that is well managed.**

Throughout the difficult process in 2019 in developing the excessive shares amendment, the clam industry has acted in good faith to help the MAFMC and the NMFS develop a definition of excessive shares as a percentage of the cap on allocations, as they say are necessary under National Standard 4 and have encouraged the clam industry to develop a consensus preferred option which the clam industry has presented at the four public hearings and in written form. However, during this process the clam industry has witnessed questionable actions taken by the MAFMC's Scientific and Statistical Committee (SSC) in commenting on economic issues related to the excessive shares amendment, and questionable actions taken by MAFMC staff in

supplementing a Draft Public Hearing Document after it had been approved by the full Council for public hearings. The clam industry believes that the two questionable actions referenced above are detrimental to the clam industry and, in fact, prejudicial in advocating for Alternatives 5 and 6 for excessive shares. LFF is aware that other commenters will be elaborating on the inappropriateness in how MAFMC and/or NMFS staff revised the Council-approved public hearing document to provide additional support for Alternatives 5 and 6 before releasing the document to the public in July 2019, the inclusion of a term, "excessive consolidation", and the inclusion of information that may not measure up to a 515 Request challenging the Information Quality Guideline set by the NMFS. LFF will be closely watching further actions on this excessive shares amendment to see how the questionable facets of the public hearing process are explained.

LFF appreciates the opportunity to comment on all the sections of this Draft public hearing document on excessive shares.

Sincerely,

Michael A. LaVecchia, Vice President
LaMonica Fine Foods

cc: Daniel P. LaVecchia
Peter Himchak

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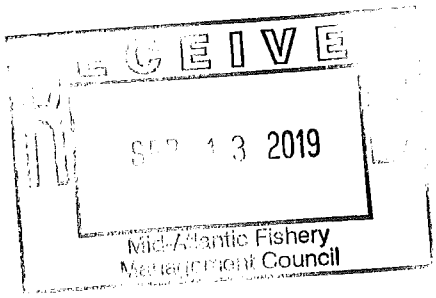

August 22, 2019

Mid Atlantic Fishery Management Council
800 North State Street
Dover, Delaware 19901

Re: Excessive Share Amendment

Council Members and Staff,

I am Tony Martin, owner of surf clam allocation. We lease our quota in full every year since we sold our vessel.

We disagree with the need for an excessive share definition but if there must be one then it needs to be a cap high enough to allow for the industry to consolidate or make changes with so few players. It was originally designed to reduce harvest capacity and many of us took advantage of this and have relied on this income year to year.

The proposed Alternatives 5 and 6 will have detrimental impacts on our income. These Alternatives are splitting the quota into A and B shares. The A shares will be handed out based on the level of harvest on the last few years. This will be devastating to us. The A shares will be approximately 65% of what we have normally been receiving. The marketability of clams is limited for the foreseeable future due largely to clams being an ingredient and not a center of the plate item. The other reason is the large amount of imports that are allowed into our country diminish the ability to sell more.

Its shows that the purpose is to increase activity in the leasing market, but the result will be nothing more that a loss of income for many quota holders that were given the opportunity reduce their harvest capacity years ago by the implementation of transferable quotas. There is no reason for this and 5 and 6 should not be chosen.

Thank you for the opportunity to express our public comments.

Anthony E. Martin

To the Council,

I'm in favor of matching the quota with industry's needs. People have told me that clam ITQ's are strictly a processors quota. I don't believe that was the intent of the council when it was developed. I hope it's not now.

When clam ITQ's were first distributed, individual allocation holders had the option of buying, selling, or leasing theirs or someone else's allocation. If independent fisherman were not being encouraged to retain their quota their option to lease would not have been available. Most people did not receive an allocation that would be adequate to maintain a boat. Not having a working relationship with lending institutions made it very difficult for independent fishers to purchase ITQ's! In most cases, sell or lease was the only options.

When Amendment 7 was in force, (this was a time-based quota) there was a period of time when all clam boats were allowed 2 days a week to fish. The annual quota was monitored quarterly and if the catch was falling behind, the council would increase time at sea and reverse it if the catch was excessive.

The American Original Co. was the largest clam company with the largest fleet of clam boats. They did however buy shell stock from independents for a portion of their needs. American Original decided to lay off all their independent boats when the next quota estimate was posted; the quota was not being harvested. American Original told the council they needed to increase the time allocated at sea from 2 days to 3 days, and to the council's credit, they said that would not happen until all the independent boats had a market. Sound familiar?

I'd like to see more representation of unaffiliated clammers (ITQ holders) on the council and industry panel.

Thanks

From:	Squarespace
To:	Montanez, Jose
Subject:	Form Submission - SCOQ Excessive Shares Amendment Comments
Date:	Friday, 13 September 2019 11:12:29 AM

Name: Joe Garvilla

Email:

Comments: August 29, 2019

To whom it may concern,

I am told that as an armchair ITQ owner, my son and I are second rate stakeholders in the eyes of the current Surf Clam and Quahog industry.

Here is a brief listing of my resume: I have had four and a half years of active duty in the US Coast Guard, four years on a tug boat, and twenty years on commercial fishing vessels, most of which was spent clamming off the Atlantic Coast. I am seventy-one years old now and my clamming days are over. My son's resume is as follows: Mike started fishing at the age of fourteen (Bay clamming). After graduating high school, he went to work on a sea clam boat out of Ocean City, MD. He worked his way up from a deck hand to captain in two years (youngest captain in the fleet at age 19). He remained in that industry for twenty-three years, fishing from Cape Cod, MA to False Light, NC. He currently is a captain of a research vessel. If this amounts to armchair stakeholders, I would like to see the resume of current ITQ holders.

I have three grandchildren, two of which have expressed interest in the clam business. I have not encouraged them because I don't know if there is a place for independent stakeholders in this industry now or in the future.

We have not had a contract to lease our ITQ's in eight years. I would welcome the opportunity to bid competitively against other ITQ holders but that is not what happens. Nine years ago, I was told the reason no one needed my clams was because everybody already had contracts. Fast forward from 2010 to 2019, does anyone believe all the same contracts are still in place?

For four years out of eight years, I leased less than twenty percent of my quota. The other four years, I didn't lease any of my quota. I was told repeatedly "I don't need any of your quota unless you are willing to sell me the quota."

Originally the annual clam quotas were established using two criteria. The first was industry need for the resource and the second was whether the resource could sustain itself. When the initial clam quota was distributed, I received about twenty-two percent of the allocation we now possess. The balance of seventy-eight percent was purchased. When the council distributed the original quota, they said they wanted to encourage independent ownership as a means of protecting the resource in the same way farmers watch over their farms.

Hopefully the government has not had a change of strategy for managing the resource.

Sincerely,

Joe Garvilla

(Sent via *Mid-Atlantic Fishery Management Council*)

THOMAS SPROUL, PH.D.

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SCOQ EXCESSIVE SHARES AMENDMENT COMMENTS

September 13, 2019

Dr. Christopher Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, Delaware 19901

Dear Dr. Moore:

I have been retained by members of the clam industry to provide an expert peer review with respect to economic analysis and statements in the Atlantic Surfclam and Ocean Quahog (SCOQ) Excessive Shares Amendment Public Hearing Document. I hold a Ph.D. in Agricultural & Resource Economics from the University of California, Berkeley, and I am currently employed as Associate Professor (with tenure) of Environmental & Natural Resource Economics at the University of Rhode Island (URI). I also serve as a member of the Committee for Economics and Social Sciences of the Atlantic States Marine Fisheries Commission (ASMFC). To be clear, these comments are my own and do not reflect any official position of either URI or the ASMFC.

The content of my review is below – it is hereby submitted as public comment regarding the Public Hearing Document.

In constructing my review, I considered these expert review documents referenced in the Public Hearing Document:

- the 2019 Northern Economics report (NEI, 2019);
- the 2011 Compass Lexecon report (Mitchell et al., 2011); and
- the 2011 Center for Independent Experts (CIE) report, including the summary (Walden, 2011) and the individual expert reviews by Arnason, Katchova and Lopez.

I also considered the Report of the May 2019 SSC Meeting (SSC, 2019), which was incorporated by reference. This document was also the apparent source of text justifying Alternatives 5 and 6.

My findings are as follows.

The expert review documents conclude there is insufficient information to support implementing a specific excessive shares cap, or even if one is needed at all. They do not conclude that harmful market power is being exercised in the SCOQ fisheries, and they note that implementing an unneeded cap can lead to economic harms.

Thus, I find that Alternative 1 (Status Quo/No Action) is the most prudent alternative to adopt, followed by Alternative 2.3 (Quota share cap at 95%), which has the least potential for economic harm among the options where a share cap is established.

Alternatives 5 and 6 (two-tier quota) are likely to be the most economically harmful based on my analysis, so I strongly recommend they not be adopted. Specifically, industry data suggest that non-seller, non-participant quota holders are themselves highly concentrated. The two-tiered quota structure contemplated will turn these non-participants into oligopoly sellers of their "A shares." Economic theory predicts they will restrict sales to increase their price received and that landings in the SCOQ fisheries will fall below their current level.

With respect to all other Alternatives and Sub-Alternatives, I did not have resources to differentiate between combinations of leasing versus ownership caps. However, all of these can be prioritized according to how little impact they have, or might have, on industry.

In contrast, the Public Hearing Document appears to come to the exact opposite conclusion, making a case that the most aggressive interventions are best. I believe this conclusion is based on the following inaccurate and/or unsubstantiated economic statements:

1. The Public Hearing Document reads as if the harmful exercise of market power in the SCOQ fisheries is an established fact. This is untrue. None of the expert review documents come to this conclusion, nor is it supported by industry data. The only support for this claim is text apparently copied from the SSC meeting report, which is itself not supported by expert evaluation.

2. The Public Hearing Document also reads as if it is an established fact that industry consolidation leads to negative socioeconomic impacts. This is untrue. This claim is not supported by the expert review documents, nor is it supported by analysis in the Public Hearing Document itself.

3. The Public Hearing Document misrepresents the findings of the Compass Lexecon report and the CIE report by claiming they recommend a 40% excessive share cap. This is untrue. Both reports clearly indicate there was not enough information in 2011 to identify the correct level of an excessive share cap, or if one should exist at all. There is no new information provided to address the experts' concerns.

4. The Public Hearing Document includes text claiming there is monopsony power in the quota market. This text was apparently copied from the SSC meeting report. The SSC meeting report supports this claim by asserting the very existence of non-participants who can't sell quota is evidence of monopsony power in the quota market. This claim is not supported by any of the expert review documents, nor is it supported by economic theory or the facts of the SCOQ fisheries.

In sum, I hope you will consider my recommendations. I believe the Public Hearing Document (PHD) comes to the exact wrong conclusions regarding market power and the appropriate level of intervention into the SCOQ fisheries. The details of my analysis are presented below.

There is insufficient information to implement an excessive shares cap.

From Compass Lexecon (Mitchell et al., p. 30):

> "The relevant information the regulator must collect includes the scope, quantity, and flexibility of supply of substitute products, the level of excess capacity in harvesting and processing, the degree of product heterogeneity, the relative bargaining power of buyers and sellers, the ability to price discriminate, ease of entry, and efficiencies (or economies of scale). This information would be required for ITQ transactions as well as related industry activities including fishing (harvesting) and processing. Information on product substitution should have sufficient detail for the determination of relevant markets, as described in the Horizontal Merger Guidelines. The product of this inquiry

> will be an informed, fact-based judgment regarding the highest degree of concentration that would be consistent with a well-functioning, competitive market."

Each of the expert reviewers in the CIE Report agreed with these statements and indicated that establishing an excessive shares cap without the appropriate data available could result in economic harms to the SCOQ fisheries. As an example of how little was known at the time, Compass Lexecon developed a 40% cap using the "Rule of Three" but indicated that this was not supported by their findings regarding market power. Their use of the "Rule of Three" was considered to be ad hoc by CIE reviewer Katchova (p. 7 of her review), who indicated it was not clear how this rule should interact with the rest of their framework. At the same time, CIE reviewers Arnason (p. 8 of his review) and Lopez (p. 12 of his report) suggested that caps of 83% and 100%, respectively, might be equally reasonable given available data. Compass Lexecon acknowledges the 100% figure is possible, but deems it unlikely (pp. iv, vi, 1). Further, Arnason, the 1st CIE reviewer, states on page 14 of his expert review:

> "…I don't see any reasonable basis in the [Compass Lexecon] report or in the other data about this fishery… to set this cap. If anything my own investigations… suggest that to the extent that a cap should be set, it should be set substantially higher. My basic conclusion is that there are insufficient data to set any cap at this stage and, therefore, especially given the possible costs involved, the prudent course of action is to refrain from doing so."

There is no evidence in the PHD of new data to satisfy these expert recommendations for data collection and analysis since the recommendations were made in 2011. NMFS began collecting quota price data in 2016, but that was not available for analysis in the Northern Economics report (p. 95). Thus, it appears that the current consideration of implementing excessive share caps is continuing with complete disregard for the recommendations in the expert review documents.

There is no expert finding of harmful market power in the SCOQ fisheries.

As addressed in the various expert review documents, and at times faithfully transcribed in the Public Hearing Document (PHD), the potential exercise of market power in these fisheries requires either restriction of quota transactions or restriction of harvested clams. These

restrictions can be caused either by buyers or sellers, depending on who has market power over which market. Sellers exercising market power are called monopolists or oligopolists (depending on whether there is one or more) and they exercise market power by restricting their sales to increase the price received. Buyers exercising market power are called monopsonists or oligopsonists and they exercise market power by restricting their purchases to decrease the price paid.

Figure 1 shows each potential scenario where processors could potentially exercise market power in the SCOQ fisheries. I evaluate them in turn, below. None of the potential market power scenarios are supported by the available evidence.

Potential Processor Market Power Scenarios

Quota Market. Market power used to restrict quota transactions.

1. Quota *oligopoly*
   - Sales of quota are restricted by large holders to increase price received.
2. Quota *oligopsony*
   - Purchases of quota are restricted by large buyers to lower price paid.

Clams Market. Market power used to restrict clams transactions.

3. Shucked clams *oligopoly*
   - Sales of shucked clams to food companies are restricted to increase price received.
4. Harvested clams *oligopsony*
   - Purchases of clams from independent harvesters are restricted to lower price paid.

Figure 1

Quota Market Power Scenarios.

Scenario 1: Quota Oligopoly. Neither the SSC nor any of the expert review documents have found evidence of monopoly/oligopoly restriction of quota sales. For example, Compass Lexecon concluded that "…the evidence we analyzed does not support a conclusion that market power is currently being exercised through the withholding of quota (or, apparently, through other means as well)" (p. 26).

Scenario 2: Quota Oligopsony. Only the SSC has asserted there is monopsony/oligopsony restriction of quota purchasing, but without any outside support for the claim. I believe this claim is based on incorrect economic reasoning. The below text appears without any supporting reference on pages 153 and 156 of the PHD, and on page 9 of SSC (2019):

> "Once the processing sector accumulated enough catch shares to match the market equilibrium output [MEO] the game was over. The processors would produce the MEO level of production with their own annual shares, and all other annual shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, in order to fulfill the market demand, all of the catch shares will have to be utilized and all ITQ shareholders would be able to utilize their shares and the monopsony power would disappear. Since the condition in these fisheries is that the TAC > MEO, some catch share owners cannot rent or sell their shares due to the monopsony power of the processors."

As I will show below, the SSC logic is flawed because quota oligopsony does not cause unsold quota to go unused. The observation of unused quota is consistent with either a) excess TAC relative to what can be harvested profitably, or b) market power of processors reducing the total volumes in the clams market below TAC (that would otherwise be fully harvested). The second one would be oligopsony power over harvests. By itself, unused quota offers no conclusive evidence for either case. I will show in what follows that the other available evidence suggests excess TAC explains the unused quota, rather than market power of processors.

Clams Market Power Scenarios.

Other than restricting quota, the only potential for market power is restricting the clams trade itself. Any restriction of clams would be expected to originate with processors, based on incentives to either restrict sales of shucked clams (oligopoly power as sellers to food manufacturers) or restrict purchases of harvested clams (oligopsony power as buyers from independent harvesters). In both cases, processors would be observed restricting the total volume of clams since they would not benefit from building up unsold inventory.

None of the expert documents conclude that processors are exercising market power over the clams trade. Compass Lexecon states "…the evidence does not support the conclusion

that the processing sector has exercised market power in the Surfclam or Ocean Quahog fisheries" (p. 26, note 73). Along similar lines, Northern Economics concludes: "While the barriers for new entrants into the harvesting and processing sectors of the surfclam and ocean quahog fisheries are substantial, there is insufficient information to definitively conclude that these barriers have led to market power being exercised and economic inefficiencies being created" (p. 72).

Beyond the experts' conclusions, industry data I have reviewed suggest that the non-seller non-participants are highly concentrated, with a single quota holder accounting for over 600,000 bushels of ocean quahog (almost 12% of TAC), and the top three accounting for more than 1,100,000 bushels (over 20% of TAC). As I understand it, these non-participants collectively, and the largest one individually, have enough quota to start their own competing processing facility. If processors were artificially restricting either harvests or the production of shucked clams, these quota holders could immediately step in and compete with sufficient scale. The fact that they have not done so is further evidence that market power is not being exercised by processors over the clams trade.

Scenario 3. Shucked Clams Oligopoly. Compass Lexecon concludes that processors are unlikely to be oligopoly sellers of shucked clams because they are unlikely to be able to restrict sales (in order to exercise market power). This is due to the presence of competing products and due to the market power of the food manufacturers that are their main customers (p. 25). Similarly, Northern Economics concludes that "competition for buyers and availability of imported substitutes suggest that processors are unable to control their selling price" (p. 72). These findings are not disputed by the SSC nor by the CIE expert reviewers.

Scenario 4. Harvested Clams Oligopsony. With regard to concentrated processors possessing monopsony power over independent harvesters, Northern Economics cites a 2009 study by the National Marine Fisheries Service (NMFS): "NMFS determined that there was insufficient information to definitively conclude that this concentration has reduced the bargaining power of vessels over ex-vessel prices or ITQ quota share price" (p. 72). Compass Lexecon also concludes that processors are unlikely to be restricting purchases of harvested clams because i) a vertically integrated processor "would not benefit by underutilizing its owned harvesting assets in order to depress the price of harvesting services" (p. 26), and ii) quota

prices near zero are consistent with excess TAC rather than with harvest being restricted below TAC (p. 10).

Despite these conclusions, the PHD states (this text appears on pp. 106, 133 and 138-139):

> "The condition of TAC not binding and quota prices of zero are also consistent with a monopsony scenario. Given that this is a vertically integrated industry and there with a small number of vessels and processors predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern than monopolization in the output market (Walden, 2011)."

This is the only citation of an expert review in the PHD given to support the claim that market power is being exercised by processors. The CIE report (Walden, 2011) in general mentions that Compass Lexecon should have been tasked with evaluation of harvest monopsony rather than quota monopoly, because it is more likely to be a problem in the SCOQ fisheries. The report does not, however, reach any conclusion that monopsony power is being exercised.

The key statement in the above text is "The condition of TAC not binding…" which comes from the expert review of Lopez (p. 13). He correctly points out that TAC not binding and quota prices near zero might be consistent with a) a competitive market with excess TAC, or b) a market in which vertically integrated processors will have an incentive to restrict harvests once their own harvesting capacity is used up, since this also could result in near zero quota prices. Additional information is needed to distinguish between the two cases.

Critically, both Lopez and Compass Lexecon (p. 26) agree that vertically integrated processors will not restrict their own harvests if they are exercising market power. Thus, if they are not harvesting at close to 100% capacity, it is evidence that processors are not exercising monopsony or oligopsony power and rather we are in a world of excess TAC. To assess this concern, I interviewed four major processors in the SCOQ fisheries, and was informed that they each have 10-30% unused harvest and processing capacity, and unused, accessible quota (either owned or by leasing arrangement). Combined with the other available evidence, this suggests processors are not restricting harvests artificially but are instead being truthful in reporting the inability to sell more shucked clams. In other words, while oligopsony

power of processors over harvesters is worthwhile to consider and evaluate (as per all CIE reviewers), it does not appear to be exercised in the SCOQ fisheries.

The SSC claim of quota monopsony does not make sense.

The only potential form of market power not fully addressed above is oligopsony restriction of quota purchasing. This is asserted by the SSC to be taking place but not supported elsewhere in the expert review documents: "The very existence of non-participating ITQ owners is proof of monopsony power" (SCC, 2019, p. 10; referenced but not repeated on pp. 153 and 156 of the PHD). I believe this claim by the SSC to be incorrect, perhaps due to inaccurate or incomplete evaluation of the supply-and-demand model.

Specifically, economic reasoning dictates the supply of quota is defined by the opportunity costs of sellers – they will not accept a price less than their outside option. All quota holders who can use quota profitably will have that profit as an opportunity cost of selling quota, but non-participant quota holders cannot use quota profitably and thus should sell for whatever they can get. Supply and demand curves in a competitive quota market (there has been no finding to the contrary) are shown in Figure 2 (no excess TAC) and Figure 3 (excess TAC).

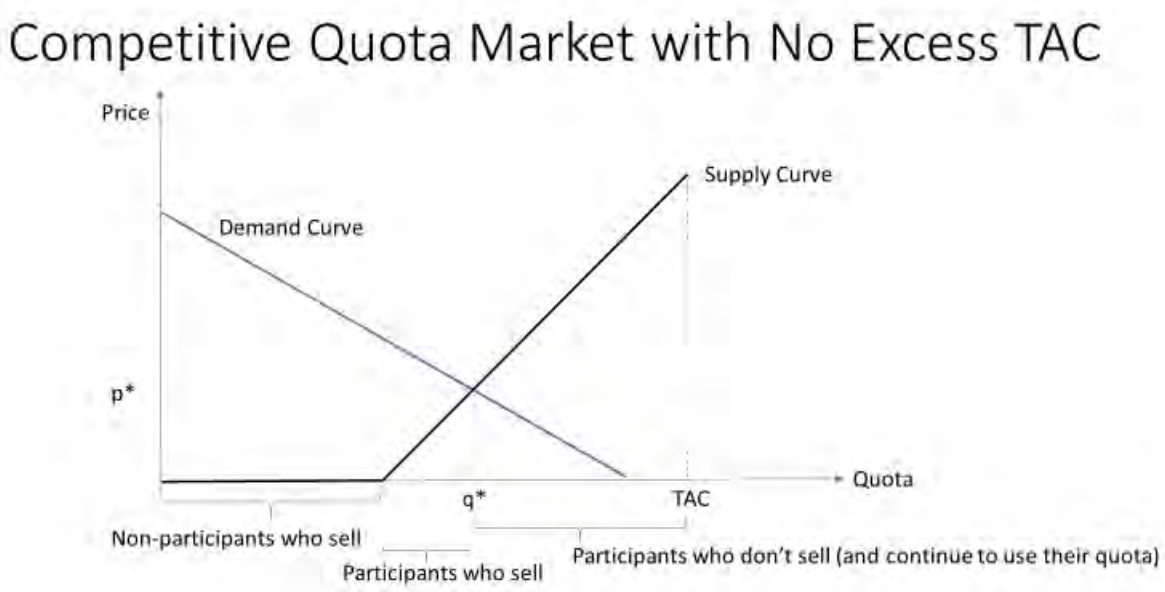

Figure 2

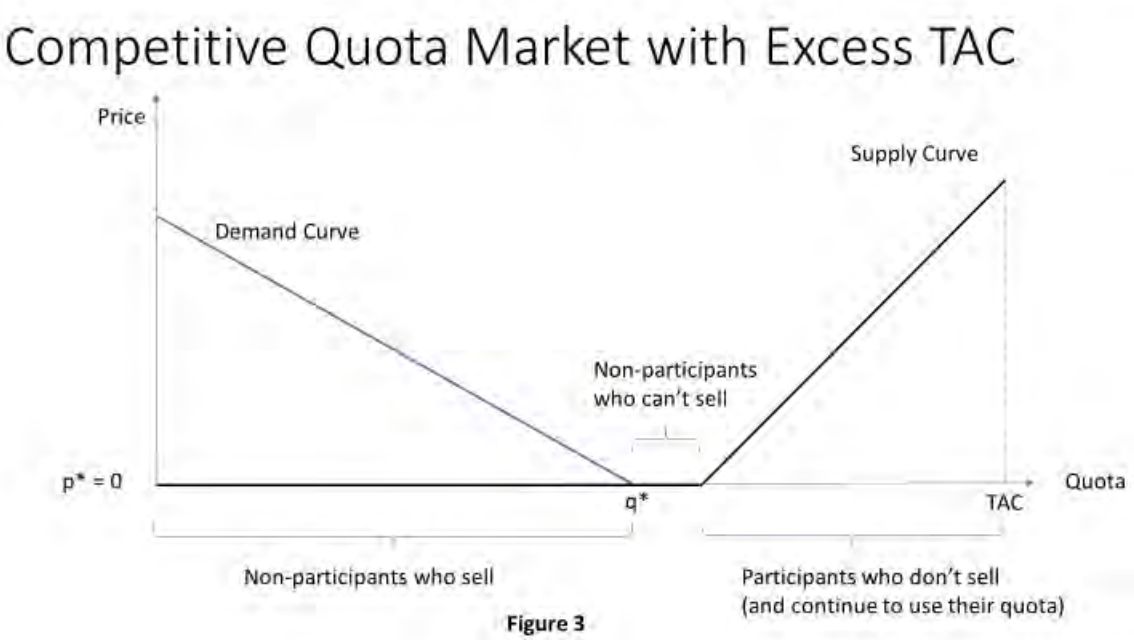

Figure 3

In both Figures 2 and 3, q* and p* are the equilibrium quantity and equilibrium price, respectively. The key difference between the figures is that Figure 2 shows the quota market when there is no excess TAC – the TAC is binding on the fishery. In this scenario, not all quota is sold, but all quota is harvested because those who don't sell can (and will) still use their quota to make a profit. In contrast, in Figure 3, there is excess TAC – the TAC is not binding on the fishery because it is not economically profitable to harvest the full quota. In this scenario, the full demand for quota can be supplied, but prices will be near zero and there will be non-seller non-participants, features that are currently observed in the SCOQ fisheries.

Consider how the picture changes under quota monopsony. A large buyer exercises monopsony power by reducing the amount of quota purchased in order to reduce the price they pay. The large buyer has an incentive to drive price down by restricting their purchasing to only the least profitable harvesters, who must accept a lower price. There is no incentive to restrict quantity from non-participants because there are no other lower cost sellers.

In comparison to Figure 2, Figure 4 below demonstrates these ideas for quota monopsony with no excess TAC. In the Figure, q* is the competitive market equilibrium quantity corresponding to the price p*. To maximize profits (this is the point where marginal expenditure crosses the monopsonist's demand curve), the monopsonist chooses the quantity q^M and pays only the price p^M for what they purchase. Since a monopsonist only

operates against the upward-sloping part of the supply curve, there is no incentive to reduce quantity to the point where non-participants are excluded.

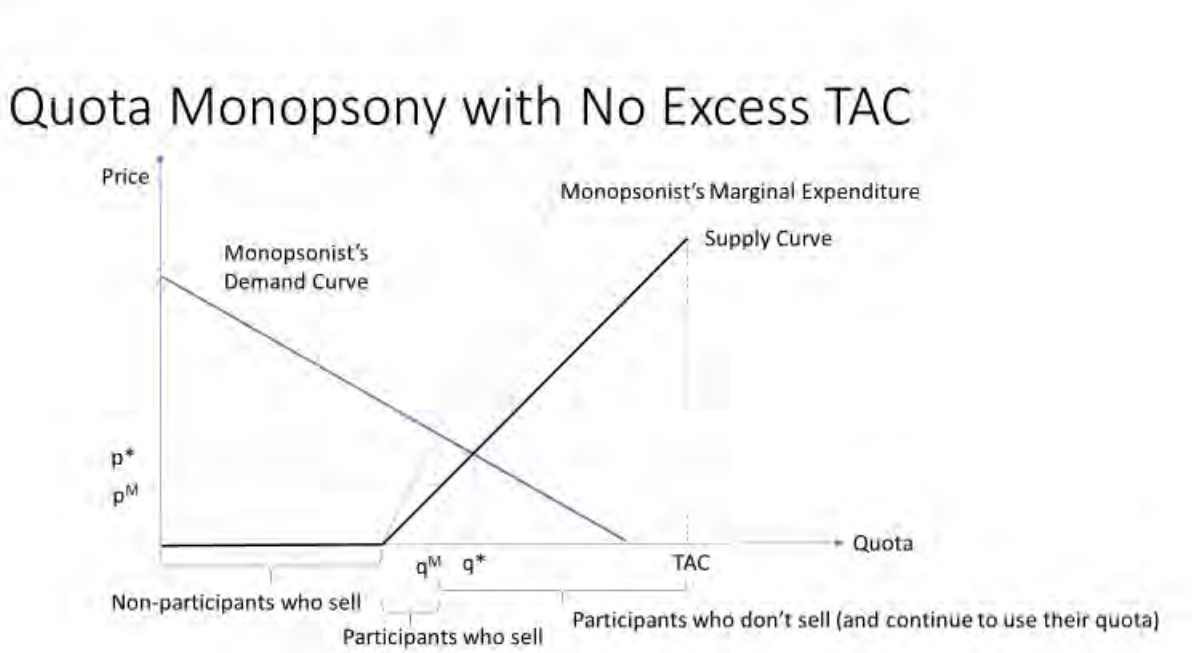

Figure 4

Further, the exercise of market power in this case leads only to a limit of exchanges between profitable participants and the monopsonist – the difference between q^M and q^* is the number of participants who are now unable to sell due to the exercise of market power. As in Figure 2, the quantity of landings is not reduced (it remains at the TAC) because those who don't sell can profitably use quota on their own. Thus, the SSC claim, that non-participants being unable to sell is evidence of quota monopsony, is incorrect.

Otherwise, if the SSC is mistaken and there is in fact excess TAC in these fisheries, then economic theory predicts we will observe market behavior consistent with the observed facts. Namely, those who can use quota profitably will do so, some who cannot use it profitably will sell or lease quota, and the rest of those who cannot will end up as non-participants who can't sell. Thus, so long as quota held by non-participants exceeds the demand of large buyers (as occurs with excess TAC), there is no incentive for large buyers to exercise market power. This is shown in Figure 5 below, which is materially identical to Figure 3, because the monopsonist will choose the competitive outcome in this case.

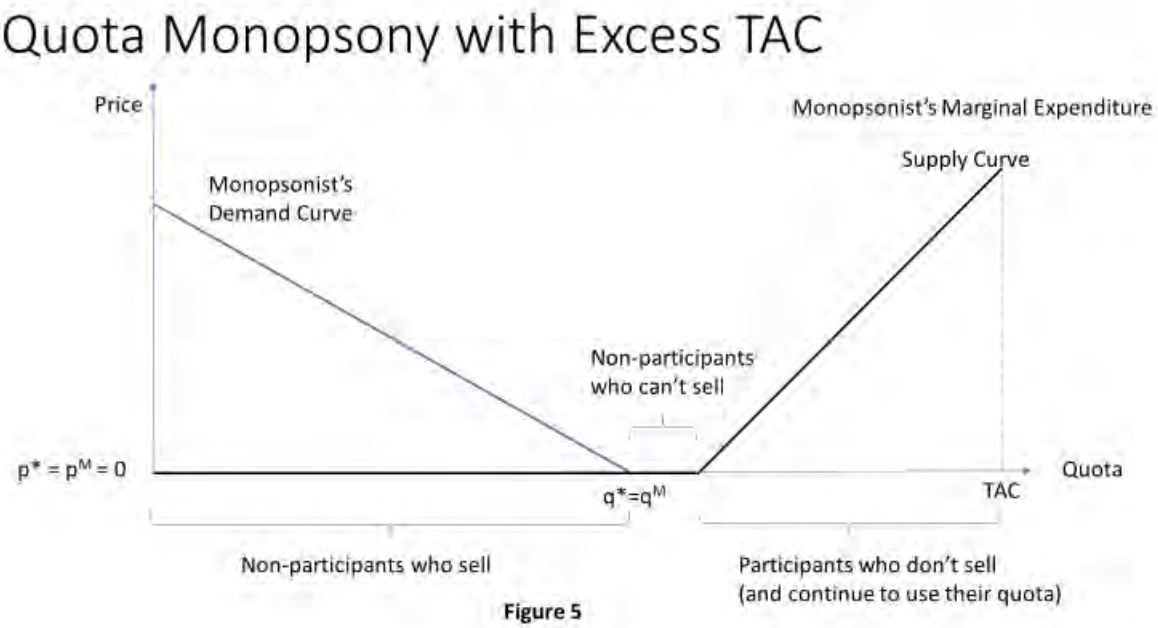

Figure 5

To summarize, the SSC asserts that non-participant, non-selling quota holders are evidence of monopsony power in the quota market. This claim is inconsistent with the economic reasoning outlined above regarding monopsony power in the quota market. In fact, the observation of non-selling, non-participant quota holders is more consistent with excess TAC than with quota monopsony under a binding TAC.

Finally, it is also possible that the SSC has mistakenly conflated quota oligopsony power with harvest oligopsony power. I say this because harvest oligopsony is the only market power scenario in which there would be no excess TAC under perfect competition and yet non-participants are still unable to sell, due to oligopsony restriction of total volumes in the clams market below TAC. However, as detailed above, harvest oligopsony power being exercised by processors is not supported by the expert review documents or the available evidence.

Setting an unneeded excessive share cap is potentially harmful.

The Compass Lexecon report and the expert reviewers of the CIE concluded that implementing a share cap without sufficient information should be avoided because it could be harmful. It has been demonstrated above that there is no credible finding of market

power being exercised in the SCOQ fisheries, so there is no apparent economically-motivated need for an excessive share cap to be set at this time.

The expert review documents indicate a number of potential downsides of prematurely setting an excessive share cap without sufficient information. Chief among them are the loss of economies of scale, which may be necessary to the survival of a processing firm (Lopez, page 12) and the loss of economic efficiency gains from redistribution of output towards more efficient firms, "that may be crucial for the survival of the industry, particularly when demand is depressed" (Lopez, page 15). Both of these types of efficiency gains are ostensibly the chief goals of the SCOQ ITQ program (Amendment 8) in the first place (NEI, 2019, page ES-3, Table ES-1, Goal 3, and p. 52), so to limit them without accurate assessment of tradeoffs seems arbitrary.

The Northern Economics report (p. 81) indicates that the Council is developing an excessive share amendment because NMFS has determined the SCOQ Fisheries Management Plan (FMP) to be out of compliance with National Standard 4 due to the lack of an excessive share cap. Assuming that the amendment must happen regardless of available data, it is worth evaluating what type of excessive share regulation has the least potential for harm. Since the available evidence does not suggest that harmful market power is currently being exercised, any adopted regulation should leave current ownership and leasing practices undisturbed. Establishment of excessive share caps above these current levels depends on evaluating whether further competitive pressures on the clam industry or further technological, harvest, or other production efficiencies will necessitate further consolidation in order for industry participants to survive. In the event an excessive share cap is set, there should be a mechanism in place for timely, responsive evaluation of the need for changes to the cap so as not to harm the industry. This observation is confirmed in the PHD: "an excessive shares measure established at an appropriate level now could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry)" (p. 21).

Alternatives 5 and 6 are likely to be harmful.

Consideration of the A and B shares structures contemplated in Alternatives 5 and 6 appears also to be justified only by the text in the PHD that was taken from the SSC. I believe that Alternatives 5 and 6 will form the non-participant quota holders into oligopoly sellers of their "A shares" because industry data suggests that the non-participant, non-selling quota holders are themselves highly concentrated. Turning them into oligopoly sellers will lead to reduction of landings and resulting economic harms. This obvious potential downside is only briefly mentioned as unlikely (pp. 155 and 158) but never evaluated within the PHD, which states that expected impacts on landings and/or socioeconomic outcomes from these Alternatives are either none or positive (pp. 154 and 157).

The PHD describes the unique feature of Alternatives 5 and 6 on pages 152 and 156:

> "…this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings… and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted."

For example, if 40% of TAC has gone unharvested in recent years, then every quota holder will receive 60% of their quota as A shares and 40% of their quota as B shares. The clear intent of this policy is to require leasing of quota from non-seller non-participants, if current levels of production are to be maintained. In particular, this means the productive 60% of the fishery will now need to lease 40% of their current production from non-seller non-participants before any further quota can be released. The PHD states on pages 155 and 158:

> "while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met."

The assessment "while not likely" is not supported by economic reasoning, yet the potential downside of the policy is not further addressed beyond a statement that impeding the release of B shares might be met with changing the policy to something less than 100% use of the A shares as a trigger. As mentioned above, industry data suggest that the non-seller non-

participants are highly concentrated, with a single quota holder accounting for over 600,000 bushels of ocean quahog, and the top three accounting for more than 1,100,000 bushels. Thus, the ability of A shares to hold B shares captive will essentially turn the non-participants into oligopoly sellers of quota. Economic theory predicts they will restrict quantities sold to maximize the price received, and since all unsold quota will be held by non-participants, total landings in the SCOQ fisheries will decrease below their current level.

To be clear, I am asserting that the contrived market for A shares will have a fundamentally different structure than the quota market and clams markets as already evaluated. It is this different structure which will incentivize non-participants to exercise market power in a manner not observed in the other domains. Recall that oligopoly power is exercised by reducing the quantity sold in order to charge a higher price to buyers with the highest willingness-to-pay. Since the buyers faced by the non-participant sellers are all of the active industry participants who can use quota profitably, and since industry participants vary in their ability to profit (and hence their willingness-to-pay), the opportunity will be available for the oligopoly sellers of A shares to restrict quantities and raise prices on quota.

As discussed above, the exercise of market power is only harmful if the lost economic efficiency is not offset by efficiency gains elsewhere. In this case, there are no efficiency gains because the non-participants have no cost (opportunity cost or otherwise), so there are no potential economies of scale. The only other potential efficiency gain would be if the oligopoly power over A shares by non-participant quota holders was balancing out oligopsony power by quota buyers and therefore reducing efficiency losses. This is really the only way that the proposed reallocation of shares makes economic sense. However, as discussed above, the harmful exercise of oligopsony power in the quota market is asserted by the SSC without evidence and is not supported by the available evidence, by economic theory, or by any of the expert review documents. Thus, the share reallocation mechanisms in Alternatives 5 and 6 are likely to be harmful.

Alternatives should be ranked to minimize the potential for economic harm.

As suggested above, there is no expert conclusion of market power, there is potential for economic harm when setting an excessive share cap that is not needed, and Alternatives 5

and 6 are expected to be particularly harmful among the Alternatives considered. This analysis suggests a ranking of the Alternatives under consideration from least potentially harmful to most potentially harmful.

Alternative 1 (No Action/Status Quo) would be the least potentially harmful, followed by Sub-Alternative 2.3 (Quota share cap at 95%) which is the least restrictive of the options in which a share cap is set. Alternatives 5 and 6 (two-tier quota) can be considered the most potentially harmful. All other Alternatives and Sub-Alternatives appear to be more potentially harmful than Sub-Alternative 2.3, but less potentially harmful than Alternatives 5 and 6. Among these remaining options, less restrictive is better because a higher share cap has less potential for economic harm, but I have insufficient data to specifically identify optimal tradeoffs between quota versus leasing versus combined caps.

The PHD contains many incorrect or unsupported economic statements.

The PHD repeatedly uses incorrect or imprecise language with respect to economic concepts, and this language is used to draw incorrect conclusions throughout the document. The PHD uses an incorrect economic definition for excessive consolidation, and incorrectly conflates industry consolidation with both harmful market power and negative socioeconomic impacts. Furthermore, the lax approach to economic language throughout the document appears to spill over into two erroneous conclusions. First, the PHD misrepresents the findings of the Compass Lexecon and CIE reports as containing recommendations for a 40% excessive share cap, when they do not. Second, the PHD relies on the quota monopsony claim of the SSC. This claim is inconsistent with economic theory and with available evidence, as has been shown above. It is also possible that this claim by the SSC has been incorrectly conflated with the possibility of oligopsony power of processors over independent harvesters, a scenario with predictions that more closely match those of the SSC's claim but that are still not consistent with the available facts.

Incorrect Economic Definition of Excessive Consolidation

The PHD uses an incorrect economic definition of excessive consolidation, claiming it is "…a situation where one or more firms can exert market power…" (p. 6, 29, 39, 122). From an economic perspective, industry consolidation is only excessive when it results in the actual

exercise of market power and when efficiency losses from that exercise are not offset by efficiency gains elsewhere, e.g. from returns to scale. Critically, this means that even 100% market share may not be excessive depending on market factors, and that the PHD definition is incorrect.

This incorrect definition is repeated throughout the PHD, undermining the credibility of the document and the claims relying on this definition. For example, the statement "an excessive share could result in market power" appears nine times throughout the PHD (pp. 7, 136, 138, 146, 147 twice,150, and 152). The statement relies on circular reasoning because it is market power that results in shares being excessive, not the other way around.

Incorrect Characterization of Harmful Market Power as an Established Fact

The PHD reads as if the harmful exercise of market power in the SCOQ fisheries is an established fact. This is untrue. None of the expert review documents come to this conclusion, nor is it supported by industry data. The only support for this claim is text apparently copied from the SSC meeting report.

Based on the evidence reviewed above regarding potential market power and regarding the SSC claims, it is reasonable to conclude that the harmful exercise of market power is an opinion expressed in the PHD, but not an established fact. Furthermore, the evidence reviewed above indicates that this opinion is likely to be incorrect.

Unsupported Characterization of Potential Socioeconomic Impacts

The PHD reads as if industry consolidation leading to negative socioeconomic impacts is an established fact. Just like the unjustified claims about harmful exercise of market power, this claim is not supported by any of the expert review documents nor by new analysis in the PHD itself. In fact, across the expert review documents, the word "socioeconomic" appears only in the Northern Economics report, and primarily in reference to the difficulty in quantifying specific effects on fishing communities.[1] In contrast, the word appears 117 times in the PHD, where it is repeatedly and incorrectly stated that reducing industry consolidation leads to

[1] For example: "The level of engagement in the surfclam and ocean quahog fisheries of many communities changed after the SCOQ ITQ program was implemented. While the available literature suggests that the socioeconomic effects of the program account for at least some of these community-level changes, it is difficult to disentangle the effects of the program from the effects of co-occurring factors." (Northern Economics, page ES-9, item NS-8).

positive socioeconomic impacts and increasing industry consolidation leads to negative ones.[2] They use this false claim to rank the alternatives in exactly the opposite ranking according to the available evidence. For example, in Section 1.2 (PHD, page 6), it is stated:

> "In general terms, measures that would curtail entities from exerting market power and therefore not decreasing competition would have positive socioeconomic impacts. Lastly, measures that would result in community disruptions as result of additional consolidation (e.g., decrease in the number of independent harvesters, decrease in employment) would have negative socioeconomic impacts."

This statement is not true. I have discussed above how industry consolidation does not necessarily result in harmful market power, and how it may instead result in economic efficiency gains. The available evidence suggests that is what has happened in the SCOQ fisheries. Outside of economic efficiency, the other part of "socioeconomic" is social impacts, such as disruption of fishing communities. Here, it is critical to distinguish between the intended effects of adopting an ITQ program versus any further effects caused by later consolidation.

The PHD focuses on two community disruptions as examples of negative socioeconomic impacts: decrease in the number of independent harvesters and decrease in employment. With respect to the number of harvesters, ITQ programs are generally designed as a mechanism to remove excess capital and inefficient firms (generally, smaller harvesters) from the industry. This is also an explicit goal of the SCOQ ITQ program: "Provide opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, balancing harvesting capacity with processing and biological capacity and allow efficient utilization of capital resources" (NEI, 2019, page ES-3, Table ES-1, Goal 3). Thus, the very adoption of the program implies a policy judgment that economic efficiency gains outweigh the loss of harvester diversity. Neither the expert review documents nor the PHD make the case that this has changed. With respect to employment, it is not clear that there is any social downside: "One major social effect of the program was loss of crew employment due to fleet consolidation, although the crewmembers who retained their jobs were more fully employed" (NEI, 2019, page ES-9, item NS-8). In other words, the total number of jobs

[2] This claim is found on pp. 6-27, 122, 134, 136, 138-140, 145-148, 150-152, 154-155, 157-163 of the PHD.

decreased but the remaining jobs were better jobs, so it is not clear that there is any net negative social impact on employment.

In sum, it has not been demonstrated either in the PHD or in the expert review documents that consolidation has led to net negative socioeconomic impacts. It is irresponsible for the PHD to repeatedly make statements to the contrary, and to use these statements to justify maximal intervention into the SCOQ fishing industry.

Misrepresentation of Findings of Expert Review Documents

The PHD mis-cites the expert review documents from 2011. Discussion of Sub-Alternative 3.2 (page 3): "The combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE (Center for Independent Experts) review." This statement is misleading because the Compass Lexecon report clearly states that their findings do not support a specific cap, but that they were tasked anyway with developing a framework. They then give rules of thumb to support 40%, but this is hardly a recommendation. Similarly, each expert review in the CIE report concludes there is not enough information to choose a specific cap, and doing so without that information may be harmful. As discussed above, Arnason suggests that 83% might be a plausible number (p. 25 of his review) and Lopez suggests that even a natural monopoly (100% cap) might be appropriate due to production efficiencies (p. 12 of his review). Thus, it is misleading to state that 40% caps are based on recommendations from these reports.

Summary of my findings.

I would like to conclude my letter with a brief overview of my findings. In a nutshell, there is no conclusion of harmful market power being exercised in the SCOQ fisheries, and there is therefore no economic basis for implementing an excessive shares cap. To the extent that one must be implemented administratively, prudence suggests that minimal regulation is best since the data needed to set an appropriate cap have still not been collected.

Unfortunately, the Public Hearing Document contains repeated misleading statements suggesting that essentially the opposite is true. These statements appear to rely on incorrect

economic reasoning and on inaccurate claims about how industry consolidation must coincide with harmful market power and with negative socioeconomic outcomes.

After reading my review, I believe you will agree that these statements cannot and should not be relied upon in the adoption of an excessive shares amendment for the SCOQ fisheries.

Sincerely,

Thomas Sproul, Ph.D.

WALLACE & ASSOCIATES

September 11, 2019

Via Email and U.S. Mail
Mr. Chris Moore, Executive Director
Mid Atlantic Fishery Management Council
800 North State Street
Dover, DE 19901

Dear Dr. Moore

Wallace & Associates would like to comment on the Excessive Share Amendment (ESA). However, since there are two versions, the first was published in May and the second in July, which one I should address? Both documents say they are the ESA but the May document, which was approved by the Mid Atlantic Council, attempts to addresses the issue of Excessive Shares in the clam industry, and the July document should not be called the ESA because it is a policy advocate document for a socioeconomic amendment and should be called such.

The council needs to decide whether they want to address excessive shares or social engineering. The problem is that there is no clear definition of excessive share for the clam fishery and no peer review scientific documentation to support the assertion from a policy driven bias from a misunderstanding of the facts.

These comments are based on the approved May document.

- ***Keep the current Goals and Objectives from Amendment 8.***
- ***No need for any new framework adjustments in this amendment.***
  - ***ES-2. Summary of the excessive shares review alternative. I support Alternative 1, take no action;***
  - ***ES-3. Summary if the framework adjustment process alternative. I support Alternative 1, take no action; and***
  - ***ES-4. Summary of the muliti-year management measures alternative. I support Alternative 1, take no action.***
- ***In the public hearings the clam industry supported Alternative 4.3 with minor changes***
  - ***For surfclams the ownership cap would be 35 percent and the total would be 65 percent; and***
  - ***For ocean quahogs the ownership cap would be 40 percent and the total would be 70 percent.***

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- ***The unit to be use for determining excessive share, the group used should be individual/business.***
- ***The calculations to be used for the total should be, Net Actual Percentages Model.***

Keep the current Goals and Objective (G&O).

In the last 30 years that the SCOQ FMP has been in operation, the world has changed greatly. From climate change to key clam meat buyers being consolidated or public companies going out of business such as Mrs. Pauls' and Howard Johnson and the recessions that starting in 2008. In the pre ITQ, management system the council and NMFS spent hundreds of hours per year in attempt to change the regulations as the industry and market changes. With the advent of Amendment 8 with the flexibility that the G&O provided the fishery adjusted to the ever-changing ocean, fishery, and market demand.

Northern Economics' review stated that the current G&O provided the clam industry with the needed flexibility to deal with the changes without involving the NMFS or council in the micromanaging of the fishery.

Therefore, I strongly recommend that the current G&O remain in place. **There is no good reason to change the current G&O**.

There is no need for any new framework adjustments in this amendment.

There has not been a need for framework adjustment amendments for 30 years. All of the amendments were implemented from number 9 to 19 at the direction of the NMGS or congress. None of them were wanted or requested by the industry and were unnecessary for the operations of the clam fishery.

In the public hearings the clam industry supported Alternative 4.3 with minor changes in the percentages;

In the Compass Lexecon review, they advocated what they called the **"Rule of Three"** which is what the industry has proposed. They also suggested that having a ownership cap and a lease cap would be helpful, which is precisely what the clam industry's proposal accomplishes. They also suggested that one firm could hold 100 percent of the quota and not violate any anti-trust laws.

In the first public hearing principles from the major shucking and vessel companies made presentations with what they thought was a fair and reasonable proposal for preventing an

entity from acquiring an excessive share. On a number of occasions, council members have asked what does industry need and they will support them.

From the industry perspective, Alternative 1, the status quo would be our first choice followed by 2.3 and then 2.2. The industry recognized that those would not be acceptable to some council members, so, they found common ground and proposed the following as reasonable compromise.

Compass Lexicon had a suggestion that there should be an ownership cap and a lease cap. They also suggested that having space for three major companies would be preferable. Therefore, this proposal complies with their suggestions.

For surfclams the ownership cap would be 35 percent and the total would be 65 percent

Under 4.3 the suggestion was 30% ownership and 30% lease for a total of 60%. Recognizing that the largest ownership in the surfclam fishery today was 28% they proposed that 35 percent ownership was a reasonable number giving 35% +35% + 30% in the ownership and at 65% total ownership and leases should be acceptable under Compass Lexecon (CL) recommendations.

For ocean quahogs the ownership cap would be 40 percent and the total would be 70 percent

Like 4.3 for the surfclam operators the ocean quahog operators suggested that 40% ownership and 30% lease for a total of 70% would work for the quahog fishery. This also could have three major owners of 40% + 40% + 20% again in accordance with the Compass Lexecon recommendation.

The unit to use for determining excessive shares, the group that should be used is individual/business.

Looking at ITQ ownership, using individual, family and business is the simplest and easiest grouping that can be made since there are problems in understanding who is the owner in such situations as the large amount of quota held by the banks. Keep it simple and clear.

The calculations to be used for the total should be, Net Actual Percentages.

Like the grouping of ownership, the best way is to keep the model simple. The clam ITQ is complex because of the quota and it is not required to be tied to another asset. With the understanding that there is a lot that is not known in the 100% model, the Net Actual Percentage is the only possible way to understand the percentages. No one has been able to tell us how the 100% is calculated except every unit is calculated at 100% which tells us nothing and it is used by the scallop industry, but the clam industry is completely different than the scallop fishery.

Conclusion

This is not an excessive share amendment, it is a social welfare amendment vailed as excessive shares as described in alternatives 5 and 6. There is no such thing as an excessive share at the level that the clam industry has operated under for 50 years. The surfclam and ocean quahog SCOQ fishery is by every standard, heads and shoulders above all other U.S. fishery management plan (FMP). The SCOQ is an industrial fishery and not a mom and pop operation because there is no fresh market and the unit of raw product sale is about 3,000 pounds in a 32 bushel cage. If the shucking plant does not have an order for the clam meat, the vessels are not allowed to land clams. Since clam, vessels are very specialized they cannot work in other fisheries without major refits of the rigging and different fishing gear and are no longer able to fish for clams.

In SCOQ fishery, there are very few quota holders that are not able to use some of their quota. Those who receives the original allocation, then decided to sell their boat and quota or do away with their boat and rent their quota. Those who wanted to be active participants then started buying the quota from those who wanted to leave the fishery. The one that wanted to leave found the buyers willing to pay very high prices for their quota. The buyers spent hundreds of millions of dollars but as a whole never acquired enough to only supply themselves. This worked in the favor of the non-participants renter/leasers while demand was strong. The renters that did not want long term leases (spot market) would rent for a year to the highest bidder and made out very well for contributing nothing but rent quota shares. Then the industry priced themselves out of the market and the demand collapsed, and all of the quota holders were somewhat responsible for the situation. The clam industry learned a very hard lesson, the customers were not going to pay more, and they will buy less. For the surfcalms industry the result was and still is painful. With the volume down and the overhead staying high, the margin was gone and something had to give. The clam industry has three cost centers, boat cost to catch the clams, the plants cost to shuck the clams and the quota rental price. The only variable with no cost attached was the rental of the quota from those who got the allocation to start with. The non-participant quota owners were asked to share in the pain

by lowering their rental fees, some did and some did not agree. It was their business decision. The non participants cannot have it both ways.

The FMAT has not told us who is being harmed by the current clam management plan in the U.S. The clam industry is a business and each member business at one time or another has had good times and bad, that is how a capitalist system works. Capitalist governments cannot make business better by micromanaging an industry, socialist country's try that, **they can only make it worst**. Freedom and flexibility is the only way that industry can be quickly adapt in an ever changing world.

No matter how this is seen by supporter or opponent, the current SCOQ FMP decisions made 30 years ago by the MAFMC were correct and should be kept. It showed that the industry could and would spend hundreds of millions of dollars to buy out the surplus capital; most of them had jumped into the clam industry just before the fishery management plan was to go into effect with limited entry. A group of mostly boat owners that had been in the business for generations had a choice; buy back what they lost in the original allocation. Their reduces part of their rightful allocation was given to those who did not catch much, and for their support of amendment 8. The long time participants had to buy back what they lost so they could stay in the business. These members of the industry had to purchase ITQs at very high prices. Now the ugliest idea has been put fourth, reallocate the fishery again in alternative 5 or 6. Create a socioeconomic reward to those non participants of the industry that provide nothing to the industry or the country while penalizing the industry members who made this all happen by buying up the surplus capital in the fishery 30 years ago which was the objective of the amendment in the first place (a industry funded buyback). The active participants had to borrow millions of dollars to buy back what they lost in the original allocation, to the have nots. If there is a reallocation, the operators that spent all this money will have large part of the assets taken away but not their bank loans, they may not survive. **Where is the fairness in this?**

Thank you for considering my comments.

Sincerely,

David H. Wallace

From:	MONTE ROME
To:	Montanez, Jose; Martin, Samuel; Chris Shriver; Tom Dameron; Pentony, Mike
Subject:	Proposed Excessive Shares Ammendment to the SCOQ Fishery Management Plan
Date:	Saturday, 14 September 2019 9:12:06 AM

Intershell International Corp. / F/V Tom Slaughter / F/V Tom Slaughter 2 / F/V Bing Bing 09/14/2019
9 Blackburn Drive
Gloucester, MA 01930

Chris Moore, Executive Director
Mid Atlantic fishery Management Council
North State Street
Dover, Delaware 19901

Re: Proposed SCOQ Excessive Shares Amendment

Dear Director Moore,

I attended the meeting in Rhode Island this past week to personally give my comments to the proposed amendment as referenced above. I believe that there are no pressing issues concerning the necessity of creating a complicated amendment to the SCOQ FMP to ensure that any stakeholder 'might' monopolize either of the surf clam or ocean quahog businesses.

For the entire time that the SCOQ FMP has been in place there has never been a 'grab' for dominance by any single harvester or processing company. As an Industry, we have failed to catch the allotted allocations for many years indication that there has been no effort to monopolize the business at any time in the recent past. Additionally the current amendment to the SCOQ plan under which we are operating is recognized as the most successful FMP that is in place and represents the model of success for all other FMP's to attain.

At the Rhode Island meeting, council member Jessica explained to me that 'the can had been kicked down the road' long enough and that Magnuson dictates that all IFQ fisheries must have an 'excessive share' cap. However the adage that the need for a 'cap' has been kicked down the road for years does not particularly necessitate the implementation of a 'cap' at the present time. Arguing with the extreme success that the well conceived and maintained FMP has provided our fishery is a questionable exercise as we are presented with the prospect of making changes or additions to the plan which will not improve the performance of the fishery nor create a better environment in which to prosecute the fishery.

While the adage above may describe how long the plan has enjoyed continued success the adage **'If it ain't broke, don't fix it'** applies here.

The surf clam industry has self regulated for all the years since the plan was implemented and the success of the industry relies on the knowledge and working relationships the participants have developed by working toward a common goal, following the plan as it has evolved, and keeping this industrial type

of fishery working on a daily basis. The current concerns about any one player monopolizing either the harvesting or processing components of the industry are constrained by many factors and the 2 main factors are these:

1) The capital costs for both harvesting vessels and processing operations are extreme;
2) The uncertainty of the approach which fisheries managers may take to better manage the 'best' managed fishery presents a capital investment obstacle because of the high cost and the way NOAA and NMFS dictate the terms of all the fisheries with minimal regard to participant commentary. While economic and scientific theory has some merit, the actual participants who harvest and process are the ones who know what truly influences this fishery and their input must be regarded as the having the highest level of merit.

In addition to the obstacles noted, the New England players have already been 'cap' affected by the MAC who deferred to the NEFMC regarding the Nantucket Shoals surf clam resource which has allowed the most productive areas to be closed indefinitely because the Omnibus amendment went too far with their 'bottom grab' of the shoals - which is surf clam habitat and not EFH. We are currently highly restricted in our catch because of those areas having been closed and we as a regional group will more than likely not be able to harvest enough clams to use all our committed allocations which would of course preclude any monopolization of the New England fishery.

I do not believe that any of the 15 alternatives other than Alternative 1, have basis in an effort to support the fishery at this time and that the academic suggestions conceived and presented as alternatives because something 'might' be warranted at some future date is unnecessary.

I am in favor of alternative 1 for all the reasons above. My suggestion is that the status quo be maintained until true and honest examination of the best way to address
whether the potential for a monopoly/oligopoly even exists and then the application of a simple formula based on the participants histories may need to be applied.

Very truly yours,

Monte Rome,

985 OCEAN DRIVE
CAPE MAY, NEW JERSEY 08204
TEL. (609) 884-3000
www.atlanticcapes.com

September 14, 2019

MAFMC
800 North State Street
Dover SE 19901

Re; Excessive Shares Amendment

Dear Council members and Staff,

Please accept this letter as written comments on behalf of Atlantic Capes Fisheries Inc. during the public hearing process for the Excessive Shares Amendment. We appreciate your time in considering this information.

We understand the we must have a definition of what an excessive share will be for the SCOQ will be in our fishery. Several alternatives have been put forth by staff and great deliberation has taken place at numerous meetings. Alternatives that discuss little or no change to the ownership and leasing capabilities we feel are non-starters so will not be addressed herein.

We hope that you will consider seriously the impact statements that you will see described below and how certain alternatives will have grave negative impacts to our company and other will allow us to continue business in the status quo or have the ability to expand our business.

Alternatives 5 and 6 will have grave negative impacts on our business. These alternatives were designed to increase the leasing of quota holders that may not have lessors to rent to. This is social engineering that does not benefit the industry. They were also designed to align quota with market demand. The implications of 5 and 6 have not been fully vetted with the industry and complications of A and B share quotes will quite likely force small and large clam companies to divest. Long term contracts will prevent the ability for some companies to acquire more after their A share allocation is exhausted. The B share will not be let out of NOAA because of current market condition which are not controlled by the clam industry.

Alternatives 2.0, 2.1, 2.2, 3.0, 3.1, 3.2, 3.3, 4.0, 4.1, 4.2 could create negative impacts (excluding unlimited leasing aspects) to our company and others as we/they will have very diminished ability to grow in ownership from current status and also limits the ability for companies to consolidate should that be needed do to the complex nature of the business. With the complexities of markets in general and imports diminishing domestic market availability, it is critical to be able to grow with ownership and leasing. Emerging international markets may create the need to have increased flexibility to own and lease available quota as these markets open. Larger companies need the ability to own and lease larger portions of the quota than others. The complexity of this business creates synergies within clam companies themselves.

Alternative 4.3 could have the least impact to our company. This alternative gives room for companies to expand business opportunity in allocation ownership and increases the activity in the leasing market as well. In Table 20 it was consistent in the number of participants there could be in the Net Actual Percentage and the 100% Cumulative Models.

We would propose the ALT 4.3 be chosen with the following adjustment.

- Surf Clams the ownership cap 35% and the overall quota cap with leasing of 65%
- Ocean Quahogs the ownership cap 40% and the overall quota cap with leasing 70%

This keep the ownership caps where companies can grow and room for companies with emerging markets to have larger leasing capability, thereby increasing activity in the leasing market.

Excessive Share Review Alternatives

- ***ES-2*** *- Preferred Alternative is #1 – No Action*
  - There would be no requirement to review but it could be as needed by industry or council.
- ***ES-3*** *– Preferred Alternative is #1 – No Action*
  - It would be preferred not to review through a Framework
- ***ES-4*** *– Preferred Alternative is #2 – Allow for review consistent with NRCC approval stock assessment schedule*

Thank you for considering this information as we work together for the benefit of the resource and its participants.

Sam Martin
Chief Operating Officer
Atlantic Capes Fisheries Inc.

Surfside Foods, LLC

Phone: (856) 785-2115 * Fax: (856) 785-0975

2838 High Street
PO Box 692
Port Norris, NJ 08349

September 14, 2019

To: NOAA Section 515 Officer
NOAA Executive Secretariat
Herbert C. Hoover Building B Room 5230
14th and Constitution Avenue, N.W.
Washington, D.C. 20230

Requester's name: Thomas Dameron / Government Relations & Fisheries Science Liaison / Surfside Foods, LLC

Current business address: 1733 Main Street / PO Box 692 / Port Norris, NJ 08349

Telephone numbers: office (856) 785 – 2115 or Tom mobile (609) 876 - 0189

Electronic mail address: tdameron@surfsidefoods.com

Re: Request for correction of information submitted under Section 515 of Public Law 106-554

Citation to or description of the particular information disseminated which is the subject of the request: MAFMC Report of the May 2019 SSC Meeting pages 8 – 11, and its use within the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment / Public Hearing Document / Comment Period August 1 – September 14, 2019 / Prepared by the Mid-Atlantic Fishery Management Council (MAFMC) in cooperation with the National Marine Fisheries Service, including text copied directly from these pages into the Public Hearing Document and the use of these pages as a reference source of information within the Public Hearing Document.

The date and source from which the requester obtained the information: 17 May 2019 - John Boreman, Ph.D., Chair, MAFMC Scientific and Statistical Committee, Report of the May 2019 SSC Meeting (**Attachment 1**).

The point and form of dissemination: http://www.mafmc.org/council-events/2019/may-ssc-meeting as a link titled • Meeting Report https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5ce45840166b0e000112da9d/1558468673685/May+2019+SSC+Meeting+Report.pdf

The NOAA office or program that disseminated the information:

National Marine Fisheries (NMFS), Mid-Atlantic Fishery Management Council (MAFMC) Scientific and Statistical Committee (SSC)

The subject document is the:

MAFMC Report of the May 2019 SSC Meeting, pages 8 - 11

Explanation of how the requester is affected:

Surfside Foods, LLC is a vertically integrated harvester and processor of Surfclams and Ocean Quahogs and as such must participate in the market to lease and purchase surfclam and ocean quahog allocation shares in order to conduct business and survive as an ongoing entity. The subject document, which fails to maximize the quality, objectivity, and utility, of the information disseminated, is the only apparent basis for consideration of Alternatives 5 and 6 of the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment / Public Hearing Document / Comment Period August 1 – September 14, 2019 / Prepared by the Mid-Atlantic Fishery Management Council (MAFMC) in cooperation with the National Marine Fisheries Service. Approval of either of these alternatives would cause considerable financial harm to my firm, to the active participants of the Atlantic Surfclam and Ocean Quahog industry, and to society as a whole. Alternatives 5 and 6 effectively expropriate quota from active participants in the industry and force it to be repurchased from non-participants. This will cause direct financial harm to my firm and to the other participating firms in the industry as a result of the expropriation and repurchase, as well as possible losses of efficiency at scale if quota is restricted in the fisheries. As shown in Sproul (2019, **Attachment 2**) the Amendments will create oligopoly status for non-participants as sellers of quota, which will lead to reduction of landings below current levels and economic losses for society as a whole.

Both the MAFMC, who will make an amendment preferred alternative decision, and the public who will comment on the pending Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, are relying on the Quality of this document, as defined within National Oceanic and Atmospheric Administration Information Quality Guidelines. Surfside Foods, LLC could suffer irreparable damage for which it will have no adequate remedy at law if the information quality deficiencies are not remedied.

NOAA NMFS MAFMC SSC disseminated **the MAFMC Report of the May 2019 SSC Meeting**, including these pages that do not comply with the applicable guidelines to maximize the quality, objectivity and utility of the disseminated information to a degree commensurate with the risk and magnitude of harm that could result from the quality deficiencies of such information.

The specific information which is the subject of the request:

1. “The processors have monopsony power with respect to the purchase of quota shares.” - Report of the May 2019 SSC Meeting, page 9.

2. “But in the SCOQ case, some catch share owners cannot sell or rent their shares because of the monopsony power of the processors, and their operational piece of the action is zero. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs.” - Report of the May 2019 SSC Meeting, pages 9-10.
3. “Another possible description is a group of ITQ owners who have been systematically deprived of their piece of the action over the years due to the market power of processors, which follows from the three unique aspects in this program mentioned above. The very existence of non-participating ITQ owners is proof of monopsony power.” - Report of the May 2019 SSC Meeting, pages 10.
4. “Because of unique circumstances in the SCOQ industry, market power in the form of monopsony exists and has existed for some years, and has led to serious effects on the industry;” - Report of the May 2019 SSC Meeting, Attachment 3, page 9.
5. “Alternatives 5 and 6 would remedy the market power and correct for future problems,” - Report of the May 2019 SSC Meeting, Attachment 3, page 9.

A specific statement of how the information at issue fails to comply with applicable guidelines and why the requester believes that the information is not correct:

The information at issue fails to comply with applicable guidelines because it is not factual or substantiated and the claims made are not supported by references.

Quote 1 makes an unsubstantiated claim about monopsony power. This claim is found to be both not factual and not substantiated or supported by references in Sproul (2019, **Attachment 2**).

Quotes 2 and 3 introduce the existence of non-participating ITQ owners who cannot sell quota as evidence of the claim in Quote 1. This purported evidence is found to be both not factual and not substantiated or supported by references in Sproul (2019).

Quote 4 attempts to build on the unsubstantiated claim in Quote 1 to claim that there has been actual harm to the industry. This claim is found to be both not factual and not substantiated or supported by references in Sproul (2019).

Quote 5 attempts to build on Quotes 1-4 to promote specific Alternatives for the SCOQ Excessive Shares Amendment. This Quote does not comply with applicable guidelines regarding utility because it is misleading to the general public as an audience and also because it promotes a specific policy which may harm the general public (Sproul, 2019).

It is also found in Sproul (2019) that there is extensive evidence within expert review documents commissioned by the MAFMC and/or NOAA that would lead one to the conclusion that no market power exists in the SCOQ fisheries. The cited text does not comply with applicable guidelines regarding objectivity because the text includes only

mention of a specific (unsupported) point of view and fails to reference or mention opposing viewpoints that abound in the available expert review documents.

MAFMC Report of the May 2019 SSC Meeting pages 8 – 11, and its use within the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment / Public Hearing Document / Comment Period August 1 – September 14, 2019 / Prepared by the Mid-Atlantic Fishery Management Council (MAFMC) in cooperation with the National Marine Fisheries Service, including text copied directly from these pages into the Public Hearing Document and the use of these pages as a reference source of information within the Public Hearing Document, was done out of compliance with National Oceanic and Atmospheric Administration Information Quality Guidelines.

Surfside Foods requests timely correction of the disseminated information that does not comply with the applicable information quality guidelines.

Thank you for your consideration of my request. Please reach out to me if you have any questions.

Regards,

Thomas Dameron

Thomas Dameron
Government Relation &
Fisheries Science Liaison
Surfside Foods, LLC

Enclosures:

(1) MAFMC Report of the May 2019 SSC Meeting

(2) SCOQ Excessive Shares Amendment Comments, September 13, 2019, Thomas Sproul, Ph.D.

ATLANTIC HARVESTERS LLC
50 MIDDLE STREET
FAIRHAVEN MA 02719

MAFMC
800 North State Street
Dover DE 19901

September 14, 2019

Re; Excessive Shares Amendment

Council and Staff,

Atlantic Harvesters LLC is a company that operates 6 clam vessels out of Fairhaven MA. We are also an offload facility for other clam vessels as well.

We are opposed to alternatives 5 and 6 as they will have a very negative effects on our ability to work year-round. Our boats rely on clam allocation that is owned by our parent company. If the only allocation we receive is the A shares and the overall industry marketability does not change, will we have to stop our vessels from fishing in about September putting our crews and dock workers on the unemployment line.

Our company will not have the same ability to lease quota as others do that already have long term contracts in place. No-one will be able to break them and lease to another company such as ours. Most of the quota gets leased every year even thought the processors may not use them all. The amount quota that has been un-leased year after year will not make up for the reduction caught up in the B shares. Alternative 5/6 will only DECREASE leasing activity overall. The document never identified how many bushels could not find someone to lease to. Staff has not been able to answer that question either.

It is being assumed that the tags not leased are the same number as the portion of the quota not being caught. The reality is the opposite. By choosing 5 or 6 you are diminishing the income of many and reducing leasing activity for the majority of the industry to satisfy a few non-active quota holders that purposefully do not want to lease their quota. It is a free leasing market and if they can't find someone to lease to at the price they want, they have the ability to lower their per bushel lease price and undercut the next guy saving the processors money, but they won't do that.

Our choice would be 4.3 with modification for surf clam to 35% ownership cap and cap with leasing of 65% and quahog ownership to be 40% cape and cap with leasing of 70%.

Please don't wreck our industry and choose 5 or 6.

Thank You,

Sam Martin
COO, Atlantic Harvesters LLC

KELLEY DRYE & WARREN LLP

A LIMITED LIABILITY PARTNERSHIP

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September 14, 2019

Chris Moore, Ph.D., Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901

Re: **Working Clam Fishery Coalition's Comments on the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment**

Dear Executive Director Moore:

On behalf of the Working Clam Fishery Coalition ("WCFC"), we submit the following comments regarding the Public Hearing Document ("PHD") for the Mid-Atlantic Fishery Management Council's ("Council") proposed Excessive Shares Amendment ("ESA") to the Atlantic Surfclam and Ocean Quahog ("SCOQ") fishery. The WCFC is made up of several vertically-integrated processors who are active participants in the clam industry. Members of the coalition include Sea Watch International, LaMonica Fine Foods, Surfside Products, Atlantic Capes Fisheries, and Truex Enterprises.

The SCOQ fishery is a mature, sustainable fishery. One of the first fisheries brought within an individual transferable quota ("ITQ") system nearly 30 years ago, it is well managed and largely self-managed. Fishery managers conduct resource surveys, assess the stocks and set quotas. Long-time active fishery participants have created and maintain domestic and international markets. These participants invest in science to support their fishery and have helped create durable infrastructure and employment within a larger Mid-Atlantic and New England region (Maryland, Delaware, New Jersey, Rhode Island, and Massachusetts, in particular) that needs such coastal fishing community stability.

The subject matter being considered in the ESA is of great significance to these active participants, and we appreciate your attention to their concerns and suggestions regarding

this Council action. We appreciate the Council's continued efforts to improve the SCOQ fishery, and we look forward to working with you throughout the ESA's refinement.

With regard to the ESA's proposed action for creating an excessive shares cap on SCOQ ITQ privileges, Alternatives 5 & 6 proposed by the Council, as well as most of the underlying justification for their inclusion in the ESA, are not consistent with, among others, the Magnuson-Stevens Fishery Conservation and Management Act ("MSA"), National Standards 1, 2, 4, 5, and 8 and their accompanying Guidelines ("NSGs"), and the Administrative Procedure Act ("APA"). These two alternatives, and their legal, analytical, scientific, and logical deficiencies, represent the focus of our comments.

Summary of Facts

During the ESA development process, Alternatives 5 & 6 emerged as options, and they have been controversial since their proposal. In addition to imposing "excessive share" caps (as Alternatives 2 through 4 and their sub-alternatives already do), Alternatives 5 & 6 divide quota holders' shares into A and B classes. All quota holders' A shares must be utilized before B shares are released for use in the fishery. The original stated goal for the creation of these two classes of quota shares was to "align supply and demand." Seemingly, the PHD assumes supply and demand are misaligned because not all SCOQ quota shares are utilized—some quota shares held by non-active participants remain unleased (notably, however, and as discussed below, active participants lease or own quota well beyond what they use in a given year).

In April 2019, the SCOQ Advisory Panel presented its annual Fishery Performance Report ("FPR") which explained that a regulatory, market-restricting mechanism that would require that all quota holders lease or use roughly 65% of their quota allotment (the A shares) before any quota holder could fish or lease their remaining quota (the B shares) has nothing to do with addressing excessive shares. Rather, such restructuring of the quota market would represent an intentional, regulatory redistribution of income and opportunity to passive inactive quota holders and away from long-term active fishery participants, those inactive quota holders from whom active participants lease quota, and active fishermen who sell surfclams and ocean quahogs to the vertically-integrated operators.

The FPR's observation resulted in a flurry of activity to shore up the record for Alternatives 5 & 6. As described in more detail herein, a subset of the Scientific and Statistical Committee ("SSC") drafted what it termed a four-page "scientific" rebuttal to the FPR. With no record basis, analysis, or evidence, the SSC document found "monopsony power" in the SCOQ quota market to be an established fact and invented a definition of "excessive consolidation" for the ESA to solve via Alternatives 5 & 6. The ESA needed a new problem (excessive consolidation)

to solve, as it had become evident that Alternatives 5 & 6 went well beyond addressing the ESA's stated goals and objectives of addressing "excessive shares."

The Council considered a draft PHD at its April 2019 meeting, and requested specific revisions to it. These revisions were made by the Council's SCOQ Committee, and at its June 2019 meeting the Council approved, by a vote of 15-3, the new version of the PHD. While the Council voted, 11-6, not to remove Alternatives 5 & 6 from the PHD, the Council did not vote to authorize any revisions to the PHD relating to these alternatives or the document more generally.[1]

Notwithstanding the care the Council took in finalizing the PHD, the Council-approved PHD was extensively revised at the staff level before it was released to the public in July. These revisions provide additional support for Alternatives 5 & 6 (mostly based on the same unsupported claims from the SSC paper). The unilaterally-revised PHD candidly admits these alternatives would restructure SCOQ fishery economic relations in a way that purposefully penalizes SCOQ fishery active participants who have invested the most to create today's modern fishery. Providing little to no rationale and no supporting economic analysis, the revised PHD claims such redistribution would have no negative social or economic impact beyond eliminating hypothesized "monopsony rent."

These staff-level PHD revisions make critically flawed changes to the ESA's administrative record on which the public has commented, the Council and NMFS will consider, and a court would ultimately review. For instance, the PHD was unilaterally amended in July to report *as fact* unsupported speculation regarding alleged anti-competitive conditions in the market for clam fishery quota. Significantly, however, two separate federally-commissioned independent economic studies, the 2019 Northern Economics report and the 2011 Compass Lexecon report (as well as a NMFS-sponsored peer review of the Compass Lexecon report) found no evidence of what the amended PHD now inaccurately terms "monopsony" conditions in the clam quota leasing market. Yet, absent a correction of the PHD to the version the Council voted to approve, these eleventh-hour, inaccurate, unilateral changes to the PHD will nonetheless become an important element of a fundamental building block for an ESA that has been over a decade in the making.

From that unsupported assumption of a monopsony, the amended PHD provides a wholly fabricated definition for a condition it terms "excessive consolidation" to describe the anticompetitive situation it has contrived. In addition, the amended PHD deletes descriptions of competitive market conditions that affect the market for surfclams and ocean quahogs that active

[1] https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5cfaca8934860e0001a5f25c/1559939721720/MAFMC+June+2019+mtions.pdf (last visited Sep. 12, 2019).

industry participants confront, such as by deleting specific references to competition from foreign clam imports. The amended PHD then employs these unsupported predicates to hypothesize a "social context" that does not accurately depict reality, but could arguably afford the Council and NMFS an altered and expanded statutory and factual basis to take remedial action, via ESA Alternative 5 or 6, to re-engineer the market for clam quota. These two alternatives would only benefit the fraction of clam quota leaseholders who have neither invested in the fishery over the long-term, nor are currently able to lease some or all of their quota.

The PHD's Supporting Rationale for Alternatives 5 & 6 Does Not Utilize the Best Scientific Information Available as National Standard 2 Requires

MSA National Standard 2 ("NS2") requires that "[c]onservation and management measures shall be based upon the best scientific information available."[2] The NSGs supporting NS2 further require that "[s]cientific information that is used to inform decision making should include an evaluation of its uncertainty and identify gaps in the information."[3] Moreover, "[m]anagement decisions should recognize the…economic risks associated with the sources of uncertainty and gaps in the scientific information."[4] The criteria required for evaluating best scientific information include (i) relevance, (ii) inclusiveness, (iii) objectivity, (iv) transparency and openness, and (v) verification and validation.[5] As for the role of the SSC, the NSGs dictate that "SSC scientific advice and recommendations to its Council [be] based on scientific information that the SSC determines to meet the guidelines for best scientific information available."[6] Therefore, any SSC advice and recommendations are required to satisfy the criteria listed above. However, the SSC's short paper, upon which the PHD's revisions supporting Alternatives 5 & 6 are based, fails to undertake any of these required evaluations, and instead simply posits hypothesized monopsony (what the SSC terms a "plausible explanation") as established fact.[7]

First, the SSC paper declares that "market power in the form of monopsony exists and has existed for some years." The SSC's reasoning behind this declaration is that the "very existence of non-participating ITQ owners is proof of monopsony power." However, as Dr.

[2] 16 U.S.C. §1851(a)(2).
[3] 50 C.F.R. §600.315(a)(2).
[4] *Id*.
[5] *Id.* at §600.315(a)(6).
[6] *Id*. at §600.315(c)(1).
[7] In-depth economic analysis of the flawed reasoning in the SSC's paper and the revisions to the PHD supporting Alternatives 5 & 6 can be found in the attached "Exhibit A."

Fenili's attached analyses demonstrate,[8] the problem with the SSC's opinion of monopsony power as a "plausible" explanation for the current state of the SCOQ quota market is that a *competitive market* for surfclams and ocean quahogs is also a plausible explanation. The current state of the SCOQ market is that landings are significantly below the Total Allowable Catch ("TAC"), resulting in unused quota. This is not a new phenomenon in the SCOQ fishery. Landings of surfclams in the 2010-2017 period amounted to only 70% of total quota, meaning that unused surfclam quota was 30%. In the same period, ocean quahog landings amounted to 61% of total quota, meaning that 39% of ocean quahog quota was unused.

For some reason, the SSC claims that unused quotas are evidence of monopsony power in the quota market for the SCOQ fishery. But the reality is that the market demand for quotas is a derived demand and depends on the demand for processed surfclams and ocean quahogs. Unused quota simply means that the market equilibrium quantity for surfclams and ocean quahogs is lower than the TAC. Since quota is based on TAC, the market equilibrium quantity being lower than TAC indicates there is no demand for surfclam and ocean quahog quotas. Simply put, no one will pay any price for a right to harvest if processed surfclams and ocean quahogs cannot be profitably sold in the quota market. Absent any further evidence or analysis (which the SSC paper and the PHD are lacking in this instance), an equally plausible explanation for the existence of unused quota in the SCOQ fishery is that the quota market is perfectly competitive and quota demand is being met. By failing to mention this alternative explanation, though, the SSC failed to meet NS2's requirement of scientific information which is objective and inclusive of other possibilities.

Second, the SSC paper claims that in a situation where the market equilibrium output is less than TAC, processors would only use their own quota and all other quota would go unused. It is unclear how that is evidence of anything nefarious on the part of the processors. One would expect in any type of quota market (either monopsonistic or competitive) that harvesters and vertically-integrated processors would first use their own quota, then only purchase quota from others when their quota shares are exhausted. Yet in the SCOQ fishery, most of the vertically-integrated processors still lease quota from non-participants which goes unused every year. And even if these processors followed the "use our quota first" logic, it would be consistent with the conditions of both a monopsonistic market *and* a competitive one. Therefore, the SSC failed to base its "plausible" explanation on scientific conclusions which were verified and valid.

Finally, throughout the entire four-page SSC paper, which the SSC claims to be an "economic evaluation" of the SCOQ fishery, there is not a single citation to any referenced literature, studies, analysis, or other evaluations which would support their explanations. Indeed,

[8] *See*, *generally*, attached "Exhibit A."

the entire "evaluation" by the SSC appears to be nothing more than a one-sided rebuttal to the FPR which seeks to add "scientific" support to the record for bolstering the implementation of Alternatives 5 & 6. For instance, such "scientific" reasoning includes the colloquial determination that "[o]nce the processing sector accumulated enough catch shares to match the market equilibrium output *the game was over*." In an attempt to provide shelter from attacks on these statements, the SSC acknowledges that "insufficient economic data make the qualitative analysis…the best available science presently." But this is simply untrue. Quite to the contrary, several NMFS-commissioned economic reports which analyzed the SCOQ fishery in extensive detail all failed to conclude that there is evidence of monopsonistic power in the industry.[9] There was no thorough analysis, much less a high quality one, made by the SSC in drafting this "evaluation" of the SCOQ fishery, as there was no attempt to obtain any economic information. Instead, the SSC drafters rely on opinion and hyperbole to spin an argument for the advancement of Alternatives 5 & 6, and in the process went well outside the criteria required for "best scientific information available" under NS2.

On the current record, the PHD could accurately report that "concerns were raised" about the potential for exercise of monopsony power in the SCOQ quota market. Such a statement is not inconsistent with the record and presents the SSC paper's purportedly "plausible" hypotheses.[10] In contrast, the PHD arbitrarily and capriciously claims monopsonistic conditions and excessive consolidation *in fact* exist in the quota market. "Science" is not a label; rather, it is a result of a method and includes a collection of attributes that distinguishes it from conjecture and opinion. The NGSs for NS2 plainly identify those elements, and the SSC cannot simply label a report as "science" without meeting these criteria. SSC scientific advice, including economic evaluations, carry significant weight in choosing management measures which have extremely large and wide-ranging impacts on our nation's fisheries. Therefore, if the Council were to rely upon these biased and unverified statements as scientific advice in making its decision on the ESA, the Council's resulting decisions would also violate NS2.[11]

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[9] *See* Glenn Mitchell, *et al.*, "Recommendations for Excessive-Share Limits in the Surfclam and Ocean Quahog Fisheries," *Compass Lexecon*, p. 26 (May 3, 2011); *see also, generally,* Don Schug, *et al.*, "Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program," NORTHERN ECONOMICS (May 2019).

[10] *See* Dr. Thomas Sproul's "SCOQ Excessive Shares Amendment Comments" letter which was submitted to the Council via email on September 13, 2019.

[11] Furthermore, these unsupported "scientific" claims that would be relied upon for Council and NMFS action would be in opposition to the heightened standards of the Information Quality Act ("IQA"). The IQA requires agencies to consider the appropriate level of quality for each of the products that it disseminates based on the likely use of that information. That quality must encompass utility, integrity, and objectivity. For agency information characterized as influential scientific, financial, or statistical information, such as the information contained in the ESA, that information is held to higher quality standards. This information includes that which "the agency can reasonably

Alternatives 5 & 6 Would Promote Undue Market Power, in Violation of National Standard 4, under the Guise of Preventing Such Power

National Standard 4 ("NS4") states that:

> Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.[12]

The first requirement of fairness and equity means that an allocation should be rationally connected to the furtherance of a legitimate FMP objective.[13] One of the main objectives of the FMP, via Amendment 8 in 1990, is the creation of increased efficiency of the fishery through consolidation of quota.[14] However, Alternatives 5 & 6 would divide current ITQ shares into A and B shares, require active participants in the fishery to operate on reduced quotas (A shares) and prevent access to the remainder of the active participants' quota (B shares) until they lease quota from all non-participants. Not only would such an action degrade sought-after efficiency, it would also place active participants in an unfair and inequitable position by forcing them to lease quota from non-participating ITQ holders who are not subject to market competition in the price they could demand for the last remaining A shares.[15]

In terms of promoting conservation, the NSGs provide several examples of what satisfies this requirement under NS4. One is through the encouragement of a rational, more easily managed use of the resource.[16] The current economic analyses performed for the SCOQ fishery show that it is one of the most efficiently managed fisheries in the country. Alternatives 5 & 6

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determine…will have or does have a clear and substantial impact on important public policies or important private sector decisions." *See* Russell T. Vought, *Memorandum for the Heads of Executive Departments and Agencies*, OMB M-19-15, Improving Implementation of the Information Quality Act, p. 2 (April 24, 2019).

[12] 16 U.S.C. §1851(a)(4).

[13] 50 C.F.R. §600.325(c)(3)(i).

[14] *Sea Watch Intern. v. Mosbacher*, 762 F.Supp. 370, 380 (D.D.C. 1991).

[15] The potential impact of these non-participants—and the relative concentrations of their holdings—should not be disregarded; together, three non-participating ocean quahog ITQ holders retain over 1.1 million bushels of quota; *see* Sprouls, *supra* n. 10, at p. 7.

[16] 50 C.F.R. §600.325(c)(3)(ii).

would inject a great deal of uncertainty and inefficiency into the SCOQ fishery. It would also place those active participants at a "permanent disadvantage"[17]—vis-á-vie the non-active A shareholders that would suddenly be granted market power—and upset established, often long-term contractual plans for use of the resource – all in direct opposition to the goals of NS4.[18]

Regarding the avoidance of excessive shares, the NSGs provide that any "allocation scheme must…avoid creating conditions fostering *inordinate control*, by buyers or sellers, that would not otherwise exist."[19] Yet Alternatives 5 & 6 would shift usable quota away from actual industry participants, many of whom have invested millions of dollars in acquiring their allocation rights (via purchase and lease) and invest daily in the fishery's long-term viability, only to require them to lease quota from a small number of non-participants in order to maintain their overall level of harvest. The end result would yield an unstable and damaging situation within the fishery by placing market power into the hands of a few price-setters who would be essentially unregulated in the lease prices they could demand, thus creating just the type of "inordinate control" NS4 seeks to avoid. Ironically, alternatives 5 & 6 could create a real monopsony in the course of trying to remediate a conjectured monopsony.

Alternatives 5 & 6 Would Undermine the SCOQ FMP's Goals and Objectives of Creating Efficiency, in Violation of National Standard 5

National Standard 5 ("NS5") requires that "[c]onservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose."[20] The NSGs then prescribe that an "efficient fishery would harvest the [optimum yield] with the minimum use of economic inputs such as labor, capital, interest, and fuel."[21] The SCOQ fishery, as indicated by the economic reports mentioned above, is one of the most efficient fisheries in the nation due to the implementation of Amendment 8's ITQ program.[22]

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[17] In *Guindon v. Pritzker*, the court held an amendment to the fishery's FMP as being in violation of NS4 because, in part, it placed certain members of the industry at a *permanent disadvantage* through its reallocation of the quota. 240 F.Supp.3d 181, 185 (D.D.C. 2017).

[18] *See* "Exhibit A" at p. 7, detailing the transfer of income from processors to non-participant quota holders and the resulting increase in the price of surfclams and ocean quahogs due to a decrease in harvesting.

[19] 50 C.F.R. §600.325(c)(3)(iii) (emphasis added).

[20] 16 U.S.C. §1851(a)(5).

[21] 50 C.F.R. §600.330(b)(2).

[22] *See* Mitchell, *supra* at n. 9.

The original justifications underlying Alternatives 5 & 6 (prior to the arbitrary alterations made to the PHD) were based on the goal of aligning quota supply with market demand, with a view to enabling more non-active participants to be able to lease their quota. The NGSs for NS5 state, however, that "where conservation and management measures are recommended that would change the economic structure of the industry or the economic conditions under which the industry operates, the need for such measures must be justified in light of the biological, ecological, and social objectives of the FMP, as well as the economic objectives."[23] Notably, the SCOQ FMP does ***not*** identify redistribution of wealth and opportunity at the expense of efficiency as a goal or objective. Nor do the FMP's goals and objectives contemplate fostering broad participation in the SCOQ fishery. Rather, the FMP's goals and objectives specifically contemplate industry participation will, as it has, contract over time and become more efficient.[24]

Alternatives 5 & 6 Are Not Supported by National Standard 8 As They Are Based on Inaccurate and Unsubstantiated Claims of Monopsony Power

National Standard 8 ("NS8") requires conservation and management measures to take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of NS2 in order to provide for the sustained participation of those communities, and to the extent practicable, minimize adverse impacts on such communities.[25] Alternatives 5 & 6 are justified in the revised PHD as "realigning quota supply with market demand." However, that reasoning, aside from being unsubstantiated by any socio-economic analysis, also operates off a number of suppositions regarding the actual impacts these alternatives would have on the SCOQ fishery. For instance, in response to the concerns over inordinate control of market power, the PHD blithely observed that "there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected…if there is a surge in demand."[26] Their off-hand solution to this problem was to suggest the release of B shares "when 90 *or* 95% of Quota A shares have been used."[27] This suggestion was drawn without any consideration of actual market concentration, and was based on a lack of knowledge as to how

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[23] 50 C.F.R. §600.330(e).

[24] In *Sea Watch Intern.*, the court held that the SCOQ ITQ system was not in violation of the National Standards *despite* the aggregation of quota into the hands of a few fishermen ("[t]he defendants [NMFS] have acknowledged that increased efficiency due to consolidation was one of the explicit objectives of Amendment 8."). 762 F.Supp. at 380.

[25] 16 U.S.C. §1851(a)(8).

[26] Mid-Atlantic Fishery Management Council, "Public Hearing Document," ATLANTIC SURFCLAM AND OCEAN QUAHOG EXCESSIVE SHARES AMENDMENT, p. 26 (July 2019).

[27] *Id.*

much quota is actually being leased.[28] In *North Carolina Fisheries Association v. Daley*, the court held a NMFS-commissioned economic analysis to be arbitrary and capricious and violation of NS8 because it was "designed to justify a prior determination."[29] The economic analysis conducted in that case included extensive data collection, surveys, and other criteria employed in accordance with NS2, all of which are missing in this instance. Yet, the judge still found that analysis to be in violation of NS8 due to its disregard of several critical, relevant factors. In this instance, the SSC paper, as well as the PHD provisions which rely on its unsubstantiated claims, certainly would not pass muster. In addition to lacking the necessary data and analysis needed to satisfy NS2's "best scientific information available" criteria, these documents wholly ignore relevant factors such as the possibility of free market conditions leading to unused quota shares. Therefore, justifying the implementation of Alternatives 5 & 6, even under the guise of a social benefit to fishing communities, would not satisfy the requirements of NS8.

Alternatives 5 & 6 Would Not Lead to the Achievement of Optimum Yield in Violation of National Standard 1

National Standard 1 ("NS1") requires that all "[c]onservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery."[30] However, creating instability and driving up the cost of production, via new and unknown input costs to those active participants which will now be forced to lease quota from non-participants in order to access their B shares, without providing any consumer benefits, does not satisfy the requirements of NS1. If anything, the result of implementing either of these alternatives would be a reduction of SCOQ yield. Indeed, these active participants may refrain from leasing additional quota once a chokehold is placed on their catch levels. If this occurs, catch levels would be reduced, prices would increase for buyers (like Progresso and Campbell's), and those costs would be passed on to consumers, unless the manufacturers source their needs from cheaper foreign imports. It certainly is not "optimum" to manage the SCOQ fishery to enhance the import market in a misplaced effort to redistribute domestic wealth and opportunity. Simply put, not only would Alternatives 5 & 6 create new social problems related to this fishery, but the risk of reducing optimum yield in order to solve a wholly fabricated theory of monopsony power would violate one of the most important standards enumerated in the MSA.

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[28] *Id*. at 83.

[29] 27 F.Supp.2d 650, 652 (E.D. Va. 1998).

[30] 16 U.S.C. §1851(a)(1).

The PHD's Supporting Rationale is Arbitrary and Capricious under the APA

Chairman Luisi's August 30, 2019, letter to Mr. Thomas Alspach contends that the Council has discretion to add to the administrative record "scientific advice" from the SSC and comments from the public. The problem with Chairman Luisi's contention in this instance is his implicit determination that the SSC's advice can legitimately be included in the administrative record as a scientific analysis or conclusion. Rather, the SSC's document is, at most, a hypothesis, more likely representing the opinion of the SSC participant who drafted it.

For the reasons set forth under our NS2 arguments,[31] the SSC's statements lack the necessary foundation—the required analytical and evidentiary predicates—to represent the scientific conclusions these statements purport to be and that the PHD claims they are. Simply put, the SSC's claim that monopsony power exists in the SCOQ market does not have the requisite record basis to serve as a scientific conclusion. Therefore, the PHD cannot rationally conclude that a monopsony in the quota market exists based on the information presented by the SSC. Rather, the SSC has simply built an analytical castle in the sky, from which the staff cut-and-pasted the SSC's conjecture into the PHD as "established fact."

An agency action is arbitrary and capricious if it lacks a record basis,[32] conflicts with information in the record,[33] or fails to consider relevant factors.[34] The seminal decision on this standard is found in *Motor Vehicle Manufacturers Association v. State Farm Auto Mutual Insurance Company*, in which the Supreme Court held that courts should invalidate an agency action that fails to "examine the relevant data and articulate a satisfactory explanation for its action, including a 'rational connection between the facts found and the choice made.'"[35] When reviewing the agency's determination, which in this instance includes those decisions made by fishery management councils under the MSA, courts will "consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error judgment."[36] A decision will be considered arbitrary and capricious "if the agency…entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the

[31] *See supra* at p. 4, *et seq.*

[32] *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983).

[33] *Tucson Herpetological Soc. v. Salazar*, 566 F.3d 870, 879 (9th Cir. 2009).

[34] *Dep't of State v. Coombs*, 482 F.3d 577, 581 (D.C. Cir. 2007).

[35] 463 U.S. at 43.

[36] *Id.*

evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."[37]

First, the SSC's "analysis" cannot serve as a rational basis for Council action because it lacks a rational basis itself.[38] Throughout the four-page paper, the SSC provided no data, new or old, to support its opinion of monopsony power within the quota market. Second, the SSC paper conflicts with the record because it is based on the assumption that the exercise of monopsony power in the quota market—rather than the lack of market demand for surfclams and ocean quahogs—causes SCOQ quotas to go unleased and unused. The NMFS-commissioned Compass Lexecon economic report on the SCOQ fishery concluded that "the evidence we analyzed does not support a conclusion that market power is currently being exercised through the withholding of quota" (in other words, monopsonistic conditions).[39] The SSC's conclusions conflict, moreover, with the fact that vertically-integrated processors do lease quota, and, moreover, these processors lease quota every year which goes unused. Finally, the SSC report also fails to consider relevant factors. The SSC's conclusions fail to consider the points made directly above, as well as the equally—if not more—plausible conclusion that the SCOQ quota market is actually competitive—not monopsonistic.

* * *

Thank you for the opportunity to submit these comments and for your consideration of these crucial issues. Please do not hesitate to contact us at any time if you require additional information.

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[37] *Id*.

[38] Furthermore, because the revisions made to the PHD to support Alternatives 5 & 6 are based on the flawed "scientific information" provided by the SSC documents, those revisions would also be arbitrary and capricious under the same theories for the same reasoning described above.

[39] *See* Mitchell, *supra* n. 9.

Respectfully submitted,

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EXHIBIT A

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An Economic Evaluation of the Mid-Atlantic Fishery Management Council's Most Recent Public Hearing Document Assessing the Evidence to Prove the Existence of Monopsony Power in the SCOQ Transferrable Quota Leasing Market

Background

1. I am a self-employed economic consultant. Until 2019, I was Assistant Director for the Economic Analysis Division at Georgetown Economic Services, LLC ("GES"), an economic consulting firm located in Washington, DC. I was with GES for 32 years as an economist assisting individuals and organizations in matters pertaining to applied microeconomics, including econometrics, industrial organization, antitrust economics, and consumer protection.

2. I have been involved in a range of civil litigation, arbitrations, and regulatory matters. I have consulted on matters involving damages, antitrust, advertising, consumer protection, intellectual property, and breach of contract. I have served as an economic expert witness in some of these matters.

3. I received a B.A. from Illinois State University in 1970, an M.S. from Illinois State University in 1971, and a Ph.D. in Economics with a concentration in industrial organization from Virginia Polytechnic Institute and State University in 1975.

4. I have been asked to review the science (economics) that underline the claims made that the Atlantic Surfclam and Ocean Quahog ("SCOQ") quota leasing market is monopsonistic, i.e., that SCOQ processors have market power over the price of quota leases necessary to harvest SCOQ, made by the Mid-Atlantic Fishery Management Council's most recent Public Hearing Document ("PHD").

5. The PHD states that SCOQ fishery is characterized by "excessive consolidation." The PHD defines excessive consolidation as follows:

> "Excessive consolidation, in an economic context, is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of

small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.[40]

6. While the PHD contends that excessive consolidation could occur at the harvesting and processing sectors of the SCOQ fishery, the PHD appears to mostly concern excessive consolidation in the quota leasing market.

    a. The PHD claims that the excessive consolidation has enabled lease buyers (primarily, processors) to acquire monopsony power over quota sellers.[41] The PHD is unclear what impact this monopsony power has on the market price and market output of surfclams and ocean quahogs.[42] Indeed it is unclear if this monopsony power even restricts the supply of quotas.[43]

    b. To the extent that monopsony power has restricted the supply of quota, one would expect such a restriction to affect the market price and output of surfclams and ocean quahogs. However, the PHD provides no analysis of the impact of monopsony power in the quota leasing market on the market price and output of surfclams and ocean quahogs.

    c. The PHD also contends that excessive consolidation will result in a more diverse population of participants in the harvesting or processing sectors. Presumably, the elimination of excessive consolidation will result in more entry level fishermen in the harvesting sector. But it is unclear how elimination of excessive consolidation will result in a more diverse population of participants in the processing sector.

    d. It would appear that the actual diversity on which the PHD is focused is diversity of quota sellers: it wants all quota owners to sell some portion of their quota. In this regard, the PHD has proposed a two-tier quota system aimed at eliminating what the PHD claims is the artificially depressed price of quotas. The PHD admits that "processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners."[44] The statement regarding the transfer of monopsonistic rents, of course, rests on the accuracy of the PHD drafters' opinion that monopsony power in the quota

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[40] *See* "Public Hearing Document," *supra* n. 26, at p. 6.

[41] *Id*. at p. 153.

[42] On one hand the PHD argues that monopsony power has resulted in a $0 price for quota shares, and on the other hand it contends that no one is purchasing shares at a $0 price; *see id.*

[43] The PHD indicates that some processors could produce the market equilibrium output with their own shares; *see id.*

[44] *Id.* at p. 16.

leasing market is real. It also rests on the notion that the buyers' monopsony power has resulted in a restriction in the number of leases sold.

7. As stated above, the purpose of this report is to evaluate the "science" that underlies and supports the PHD's opinion that there is excessive consolidation in the SCOQ quota leasing market. The only document that I have come across that provides support for this opinion is comments from the SSC. The SSC states that, "[b]ecause of the unique circumstances in the SCOQ industry, market power in the form of monopsony exists and has existed for some years and has led to serious effects on the industry."[45] Thus, to evaluate the science behind the statements made in the PHD, one has to evaluate the science behind the SSC statements.

The "Science" behind the SSC Determination of Monopsony in the Quota Leasing Market

8. The "science" underlying the SSC's determination that market power in the form of monopsony exists and has existed for some years is because the SCOQ fishery is different from other fisheries. The SSC states the SCOQ industry and the ITQ program is "quite special and almost unique in at least three aspects. First, the catch must be processed before sale; more than simply heading and gutting. Second, there are few buyers of the processed product (few large companies, e.g., Campbell's Soup Company). Third, for a number of years the annual [total allowable catch] has not been harvested for either species."[46]

9. The SSC further states: "a *plausible* explanation for the current state of the industry … follows from these three unique aspects. . . . once the processing sector accumulated enough catch shares to match the market equilibrium output the game was over. The processors would produce the MEO {market equilibrium output} level of production with their own annual shares, and all other annual shares would go unused. The processors have monopsony power with respect to the purchase of quota shares."[47]

10. The SSC claims that the "very existence of non-participating ITQ owners is proof of monopsony power."[48]

Is a "Plausible Explanation" Science?

11. The problem with SSC's opinion that existence of quota buyers having monopsony power is a plausible explanation for the current state of the SCOQ quota leasing market is that a competitive

[45] John Boreman, "SSC Comments on the SCOQ Excessive Shares Amendment: Attachment 3 to the Mid-Atlantic Fishery Management Council Memorandum titled 'Report of the May 2019 SSC Meeting,'" Mid-Atlantic Fishery Management Council Scientific and Statistical Committee, p. 9 (May 17, 2009).

[46] *Id.*

[47] *Id.* (emphasis added).

[48] *Id.* at p. 10.

market for surfclams and ocean quahogs is also a plausible explanation for the current state (unused quota and near $0 prices) of the SCOQ quota leasing market.

12. The current state of the SCOQ market is that surfclam and ocean quahog landings are significantly below TAC. Or put differently, there is unused quota in the SCOQ quota leasing market. Table 4 of the PHD shows that unused quotas are not a new phenomenon in the SCOQ fishery. Landings of surfclams in the 2010-2017 period amounted to only 70% of total quota, meaning that unused surfclam quota was 30%. In the same period, ocean quahog landings amounted to 61% of total quota, meaning that 39% of ocean quahog quota was unused. The range of quota utilization was from a low of 64% to a high of 77% for surfclams. For ocean quahogs, the range in utilization is 56% to 67%. Put differently, the range of unused quota for surfclams is 23% to 36%, and 33% to 44% for ocean quahogs in the 2010-2017 period.

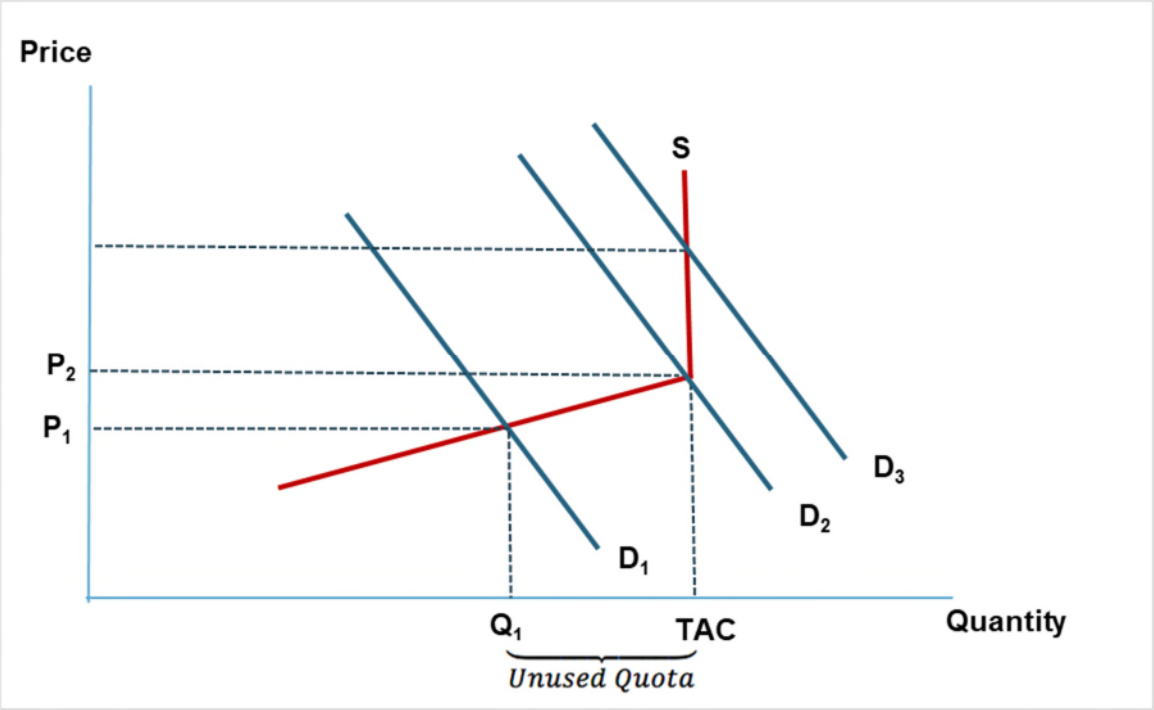
13. For some reason, the SSC claims that unused quotas are evidence of monopsony in the quota leasing market. But the essential problem with the SSC's "plausible explanation" is the market demand for quotas is a derived demand and depends on the demand for harvested surfclams and ocean quahogs.

14. Unused quota simply means that the market equilibrium quantity for surfclams and ocean quahogs is lower than the total allowable catch ("TAC"). Since quota is based on some fraction of overall TAC, this means that when the market equilibrium quantity is lower than TAC, there is little to no demand for surfclam and ocean quahog quota shares and there is excess supply of quota shares. In short, there is little to no incentive to pay any positive price for a right to harvest if processed surfclams and ocean quahogs cannot be profitably sold in the product market.

15. In Figure 1, the supply curve S is upward sloping, showing that to supply more fish requires higher prices. When TAC is reached, the supply curve becomes vertical since it is not legal to continue to fish. If demand is shown by D_1, then at that level of demand in a competitive market, price is P_1 and market output is Q_1. The difference between TAC and Q_1 is amount of unused quota.

16. What is the value of this unused quota? Given what food manufacturers want to pay for SCOQ (market demand) and the costs of harvesting SCOQ (market supply) as depicted in Figure 1, it is not profitable to harvest SCOQ at output levels greater than Q_1 even if the price of a quota is $0. Put differently, no harvesters will be willing to pay any positive amount for quota share, and the price of a quota will be $0. The price of a quota share will be $0 regardless of whether the quota leasing market is perfectly competitive or the quota leasing market is monopsonistic. Put bluntly: the existence of unused quota is not evidence of monopsony in the quota leasing market. Unused quota will exist even if the quota leasing market is perfectly competitive.

Figure 1: Supply and Demand in the SCOQ Fishery



17. If instead demand for SCOQ was at D_2 (or D_3) levels, then market equilibrium price would be P_2 (or higher) in a competitive market and output would be the TAC. In this situation, there would be no unused quota. As demand grew beyond D_1, the demand for quotas would increase and the market price to lease quota would be positive, and if demand grew beyond D_2, the lease prices would increase almost in lockstep with increases in SCOQ market prices.

18. To determine trends in the prices of leased SCOQ quota requires an analysis, at a minimum, of the trend in the demand for surfclams and ocean quahogs. This means an analysis of demand for products that food manufacturers make which use surfclams and ocean quahogs as well as an analysis of the supply of other clams used by these food manufacturers as substitutes for surfclams and ocean quahogs. Neither the PHD nor the SSC undertook these analyses.

19. The SSC also claims that in a situation where the market equilibrium output ("MEO"), or Q_1 in Figure 1, is less than TAC, processors would only use their own quota and that all other quota would go unused. Recall that the SSC concludes from these "facts" that the processors have monopsony power with respect to the purchase of quota shares

20. Putting aside that, in actual fact, most vertically-integrated processors lease SCOQ quota from others, it is unclear how this evidence of "using only your own controlled quota" is anything nefarious on the part of processors. One would expect in any type of quota leasing market (either monopsonistic or competitive) that harvesters as well as vertically-integrated processors would first use their own quota share, and then only when their quotas are exhausted [or they estimate their quotas will be exhausted] will they purchase quotas from those who have not yet leased their quota shares. This "use our quota first" logic is consistent with both a monopsonistic market and a competitive quota leasing market. It thus provides no evidence that the quota leasing market is monopsonistic.

21. In short, the SSC has failed to provide any evidence that the SCOQ quota leasing market is characterized by monopsony power, and since given the apparent reliance of the PHD on the SSC's monopsony characterization, the PHD's conclusion that there is excessive consolidation in the market is also flawed.

22. In arriving at its conclusion of monopsony in the quota leasing market, the SSC totally ignores any previous economic analyses of competition in the SCOQ fishery, namely one conducted by Compass Lexecon in 2011 and another by Northern Economics in 2019.[49] Neither study of the SCOQ fishery suggested, nor concluded, that there were competitive problems in the quota leasing market or sector. Indeed the Compass Lexecon study found no market power in the quota leasing market.[50]

23. The PHD references these studies but believes they failed (primarily Compass Lexecon) to address monopsony in the harvesting sector. The PHD's concern is that those processors can set lower than market prices for harvested SCOQ.[51] However, this concern is puzzling as the PHD's focus is on monopsony in the quota leasing market.

Magnuson-Stevens Conservation and Management Act

24. National Standard 2 – Scientific Information: Under the National Standard 2 of the Magnuson-Stevens Act, "Conservation and management measures should be based on a thorough analysis of high quality and timely economic information." There was no thorough analysis, much less a high quality one, made by the SSC, and there was no attempt to obtain any economic information.

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[49] *See* Mitchell, *supra* n. 9.

[50] *Id.* at p. 26.

[51] The PHD states that "[t]he CIE review of the Compass Lexecon report indicated that more attention should had been paid to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector; *see* "Public Hearing Document," *supra* n. 26, at p. 26; *see also*, Walden, J., "Summary of Findings by the Center for Independent Experts Regarding Setting Excessive Share Limits for ITQ Fisheries," U.S. DEPARTMENT OF COMMERCE (Northeast Fish. Sci. Cent. Ref. Doc. 11- 22)(2011).

25. In particular to the SSC, the National Standards Guidelines (NSG) for National Standard 2 state that "SSC scientific advice and recommendations to its Council are based on scientific information that the SSC determines to meet the guidelines for best scientific information available as described in paragraph (a)."[52] Section (a) of the NSG specify among other things that:

    a. "Scientific information includes, but is not limited to, factual input, data, models, analyses, technical information, or scientific assessments. Scientific information includes data compiled directly from surveys or sampling programs, and models that are mathematical representations of reality constructed with primary data. Scientific information includes established and emergent scientific information. Established science is scientific knowledge derived and verified through a standard scientific process that tends to be agreed upon often without controversy. Emergent science is relatively new knowledge that is still evolving and being verified, therefore, may potentially be uncertain and controversial. Emergent science should be considered more thoroughly, and scientists should be attentive to effective communication of emerging science."[53]

    b. "Scientific information should be verified and validated." The NSG specify that "the data and procedures used to produce the scientific information are documented in sufficient detail to allow reproduction of the analysis by others with acceptable degree of precision."[54]

26. The SSC provided no statistical or data analysis, and it did not conduct any surveys to obtain data. Neither the PHD nor the SSC provided any analysis showing the consumer demand for surfclams and ocean quahog products. Food manufacturers are important players in the final determination of market price and quantity of surfclams and ocean quahogs at the processor, harvesting and quota levels. There was no analysis of these players. In addition, the price and availability of other types of clams that are used as substitutes for surfclams and ocean quahogs by food manufacturers was ignored by the SSC and the PHD.[55]

27. The SSC provided no data, new or old, to support its opinion of monopsony.

    a. The SSC provided nothing to validate, verify, or otherwise substantiate scientific or statistical evidence to support its claims of the presence of monopsony power in the market for surfclam and ocean quahog quotas or "excessive consolidation." Instead, its claim is based simply on the presence of monopsony power being a "plausible explanation." A plausible explanation is best described as a hypothesis.

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[52] 50 C.F.R. §600.315.

[53] *Id*.

[54] *Id*.

[55] Indeed, specific references to substitute foreign clam products and competition were repeatedly stricken from the PHD.

b. In addition, I have found that there is no scientific or statistical analysis that supports the SSC's monopsony determination, and by inference no support for the PHD's excessive consolidation claim.

28. The SSC states that "… answers to policy questions require clear and credible economic analysis. It is acknowledged that insufficient economic data make the qualitative analysis in the amendment the best available science presently."[56] I take this statement to mean the SSC concedes that it has not based it analysis on any data or information and simply relies on its (flawed) logic that erroneously comes to the conclusion that the SCOQ quota leasing market is monopsonistic. Qualitative analysis is not science, and flawed qualitative analysis is certainly not science. Simply put, the qualitative analysis put forth by the SSC is neither clear nor credible economic analysis.

29. National Standard 4 – Allocations: The allocation scheme that the PHD has proposed grants inordinate control to quota sellers. Under Alternatives 5 and 6, SCOQ quotas are bifurcated into A and B groups. B group quota cannot be sold until all or nearly all of the entire A group quota are used. Essentially, this proposal would make it so that non-participant quota holders (i.e., those quota holders who do not harvest or lease SCOQ quota) are able to make quota sales.

30. There is an admission in the PHD that under these alternatives "processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners."[57] However, if the PHD's opinion that there is monopsony power is not accurate, then the transfer of income from processors to non-participant quota holders will result in an increase in the price of surfclams and ocean quahogs and a decrease in the amount of surfclams and quahogs harvested and processed.

31. Regardless of whether the PHD claim of monopsony is real or not, the imposition of Alternatives 5 and 6 would set up a market situation that is ripe to be gamed by non-participating quota holders. In a stable or expanding market, A quota holders can demand higher returns on their A quotas so that harvesters and vertically-integrated processors can obtain B quotas. Because certain processors will see their own available quota reduced (via the B quota withholding), A quota lessors can demand higher prices from certain processors even if these processors never expected to utilize B shares (because Alternatives 5 and 6 would force them to fulfill their quota requirements via the leasing market).

32. National Standard 5 – Efficiency: Under the NSG for National Standard 5, "[m]anagement regimes that allow a fishery to operate at the lowest possible cost (e.g., fishing effort, administration, and enforcement) for a particular level of catch and initial stock size are considered efficient. Restrictive measures that unnecessarily raise any of those costs move the regime toward inefficiency. Unless the

[56] *See* "SSC Comments," *supra* n. 45, at p. 10.

[57] *See* "Public Hearing Document," *supra* n. 26, at p. 16.

use of inefficient techniques or the creation of redundant fishing capacity contributes to the attainment of other social or biological objectives, an FMP may not contain management measures that impede the use of cost-effective techniques of harvesting, processing, or marketing, and should avoid creating strong incentives for excessive investment in private sector fishing capital and labor."

33. The restrictive measures in Alternatives 5 and 6 will raise the cost (and decrease the supply) of the SCOQ catch. The PHD admits to this but claims the increased costs will offset monopsony rents that accrued to those with monopsony power. This is, of course, not true if the PHD's unsupported opinion on the presence of monopsony power is not accurate. In addition, the PHD does not consider the likelihood that non-participating A quota holder users will game the quota leasing market and in effect increase the price a harvester pays to lease and utilize quota.

34. The PHD claims that imposition of Alternative 5 or 6 will result in social gains. The only example of a social gain is the PHD claim that the new system will encourage new fishermen (harvesters) into the market. This is an odd likelihood as under the current system there is a surplus of unused quota, and the proposed system would make it significantly more difficult for entry into the harvesting sector by limiting the number of shares available to new entrants.

Surfside Foods, LLC

Phone: (856) 785-2115 * Fax: (856) 785-0975

2838 High Street PO Box 692 Port Norris, NJ 08349

August 30, 2019

To: NOAA Section 515 Officer
NOAA Executive Secretariat
Herbert C. Hoover Building B Room 5230
14th and Constitution Avenue, N.W.
Washington, D.C. 20230

Requester's name: Peter LaMonica / CEO Surfside Foods, LLC
Thomas Dameron / Government Relations & Fisheries Science Liaison / Surfside Foods, LLC

Current business address: 1733 Main Street / PO Box 692 / Port Norris, NJ 08349

Telephone numbers: office (856) 785 – 2115 or Tom mobile (609) 876 - 0189

Electronic mail address: plamonica@surfsideproducts.com and tdameron@surfsidefoods.com

Re: Request for correction of information submitted under Section 515 of Public Law 106-554

Citation to or description of the particular information disseminated which is the subject of the request: Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment / Public Hearing Document / Comment Period August 1 – September 14, 2019 / Prepared by the Mid-Atlantic Fishery Management Council (MAFMC) in cooperation with the National Marine Fisheries Service.

Note: Referenced within this document and included in this request is the document MAFMC Report of the May 2019 SSC Meeting, Attachment 3.

The date and source from which the requester obtained the information: Federal Register/Vol. 84, No. 125/Friday, June 28, 2019/Notices/Page 31032

The point and form of dissemination:

https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5d2e132497c4d500016510e8/1563300650253/Excessive+Shares+EA+SCOQ+07-16-2019-Complete.pdf

and

https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/5ce45840166b0e000112da9d/1558468673685/May+2019+SSC+Meeting+Report.pdf

The NOAA office or program that disseminated the information:

National Marine Fisheries (NMFS) Mid-Atlantic Fishery Management Council (MAFMC)

The subject document is the:

Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment Public Hearing Document, Comment Period, Draft as of 07/16/2019.

Explanation of how the requester is affected:

Surfside Foods, LLC is a vertically integrated harvester and processor of Surfclams and Ocean Quahogs and as such must participate in the market to lease and purchase surfclam and ocean quahog allocation shares in order to conduct business and survive as an ongoing entity. The subject document has had improper modifications that broadens the entities impacted and the focus of the proposed Excessive Shares Amendment to the Surfclam and Ocean Quahog Fishery Management Plan. Surfside Foods would suffer harm from reduced efficiency from an over-regulating of market transactions as a result of the failure to conform to the applicable guidelines to safeguard the documents from improper modification. Surfside Foods, and society as a whole, can benefit from efficiencies that would be lost by the unnecessary over-regulating of market transactions.

Both the MAFMC, who will make an amendment decision, and the public who will comment on the pending Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, are relying on the Quality and Integrity of the document, as defined within National Oceanic and Atmospheric Administration Information Quality Guidelines. Surfside Foods, LLC could suffer irreparable damage for which it will have no adequate remedy at law if the information quality deficiencies are not remedied.

NOAA disseminated the **Atlantic Surfclam and Ocean Quahog Excessive Share Amendment, Public Hearing Document, Comment Period August 1 – September 14, 2019** that does not comply with the applicable guidelines to safeguard from improper modification to a degree commensurate with the risk and magnitude of harm that could result from the misuse or modification of such information.

The specific information which is the subject of the request and a specific statement of how the information at issue fails to comply with applicable guidelines and why the requester believes that the information is not correct:

Using the Adobe Compare Documents function, we have compared the documents that were approved by the MAFMC for dissemination and the disseminated version and found evidence of improper modification of the document.

1. The term, “protection against excessive consolidation and associated market power and social issues” was never used in the Atlantic Surfclam and Ocean Quahog Excessive Share Amendment, Public Hearing Document approved by the MAFMC for public dissemination. The term is used 43 times in the disseminated version titled **Atlantic Surfclam and Ocean Quahog Excessive Share Amendment, Public Hearing Document, Comment Period August 1 – September 14, 2019.**

This phrase from page 8 of the approved draft:

“This implies at least four entities in the surfclam and five entities in the ocean quahog fisheries, which may provide some protection against excessive share consolidation and associated market power issues.” *emphasis added*

Becomes this phrase from page 8 of the disseminated document:

“This implies at least four entities in the surfclam and five entities in the ocean quahog fisheries, which may provide some protection against excessive consolidation and associated market power and social issues.” *emphasis added*

Removing the word “share” from “excessive share consolidation” now refers broadly to consolidation within the industry, be it from consolidation within the processing sector, the harvest sector, or the ITQ share sector and expands the scope of the amendment.

Inserting “and social” to produce the phrase “excessive consolidation and associated market power and social issues” expands the stated purpose of dealing with market power, which is an economic issue, to one now with an additional social purpose.

2. There are numerous examples of cases where the text was added to or modified with apparent attempt to change the overall tone of the document by highlighting the market power and exclusionary practices argument. Examples can be found on the following page numbers on the submitted Adobe Compare Document: page number 6, 16, 19, 20, 21, 26, 29, 39, 106, 122, 139, 140, 153 (addressed below), 154, 155, 156 (addressed below), 157, 158, 159, 160, and 161.

3. The improper modification of the document by inserting the below text on page 153 and 156, and also adding the reference to the MAFMC Report of the May

2019 SSC Meeting, Attachment 3 on pages 153, 155, 156:

> As described in section 6.0, the surfclam and ocean quahog fisheries are quite special and unique in the following aspects. First, harvested surfclams and ocean quahogs must be processed before sale (e.g., clam strips, chopped or ground form for other products, such as high-quality soups and chowders). As such, processing requires more than simply heading and gutting. Second, there are a few buyers of the processed products (e.g., Campbell Soup Company, Progresso, or large food service companies, such as Sysco). Lastly, for a number of years, the TAC has not been harvested.
>
> The level the industry is willing and able to produce and sell in a given year, ceteris paribus (all else being equal) is the market equilibrium output (MEO). As indicated before, the current condition for both species is TAC [ACT] > MEO. A plausible explanation for the current state of excessive consolidation in the industry follows these three unique aspects in both fisheries. Given the share concentration levels in the processing sector, some processors could produce the MEO level of production with their own annual shares, and all other shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, in order to fulfill the market demand, all of the catch shares will have to be utilized and all ITQ shareholders would be able to utilize their shares and the monopsony power would disappear. Since the condition in these fisheries is that the TAC > MEO, some catch share owners cannot rent or sell their shares due to the monopsony power of the processors. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs (SSC 2019).

Explanation of how the requester is affected:

The improper modifications of the document change the purpose of the document and broadens the focus and attempts to substantiate the more restrictive Alternatives within the Amendment which could overregulate market transactions and reduce the efficiency of my firm and the surfclam and ocean quahog fishery on which we rely:

"The regulation of market power requires a trade-off between potentially increasing efficiency by controlling market power and potentially reducing efficiency by over-regulating market transactions. In the SCOQ fisheries, an overly restrictive cap could limit the growth of an efficient firm when there is no material threat of the exercise of market power. Furthermore, conditions in the fisheries have changed over time and will change in the future. Thus, a share cap established at an appropriate level could over time become inefficiently high or low." (Compass Lexecon Report, Recommendations for Excessive-Share Limits in the Surfclam and Ocean Quahog Fisheries Glenn Mitchell, Steven Peterson, Robert Willig May 3, 2011 pg. ii)

Quite simply there will be a reduction in the output of the fishery hurting me, my firm, the industry and society. The improper modifications significantly broaden the purpose of

the document with the added focus to regulate processor consolidation and harvester consolidation in addition to ITQ Share consolidation and the inclusion of social purpose in addition to the economic purpose.

The improper modification of the document and the addition of the reference to the MAFMC Report of the May 2019 SSC Meeting, Attachment 3, described herein make the disseminated document out of compliance with National Oceanic and Atmospheric Administration Information Quality Guidelines for Integrity.

Surfside Foods requests timely correction of the disseminated information that does not comply with applicable information quality integrity guidelines. Only the document that the MAFMC approved at the June 4 – 6, 2019 Council meeting with the necessary edits to move the Document through the Amendment Process should be disseminated for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, Public Hearing Document, for Public Comment.

We would like to reserve the right to file additional Requests for Correction of Information Submitted under Section 515 of Public Law 106-554 on the grounds the document fails to comply with the applicable information utility and the information objectivity guidelines.

Thank you for your consideration of my request. Please reach out to me if you have any questions.

Regards,

Peter LaMonica
CEO
Surfside Foods, LLC

Enclosures:

- Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment Public Hearing Document, Draft as of 05/10/2019
- Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, Public Hearing Document, Comment Period August 1 – September 14, 2019, Draft as of 07/16/2019
- Adobe Compare Document output comparing the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment Public Hearing Document, Draft as of 05/10/2019 and the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, Public Hearing Document, Comment Period August 1 – September 14, 2019, Draft as of 07/16/2019

* MAFMC Report of the May 2019 SSC Meeting

ATLANTIC SURFCLAM AND OCEAN QUAHOG EXCESSIVE SHARES AMENDMENT

PUBLIC HEARING DOCUMENT

MAY 2019

Prepared by the
Mid-Atlantic Fishery Management Council
in cooperation with
the National Marine Fisheries Service

INSTRUCTIONS FOR PROVIDING PUBLIC COMMENTS

The Mid-Atlantic Fishery Management Council (MAFMC or Council) will collect public comments on the Atlantic Surfclam and Ocean Quahog Excessive Shares Issues Amendment during 4 public hearings to be held in XXX – XXX 2019, and during a 45-day written public comment period. Written comments may be sent by any of the following methods:

1. **Online** at www.mafmc.org/comments/scoq-excessive-shares-amendment
2. **Email** to the following address: **[TBD email address]**
3. **Mail or Fax** to:

Chris Moore, Ph.D., Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901
FAX: 302.674.5399

If sending comments through the mail, please write "SCOQ Excessive Shares Amendment Comments" on the outside of the envelope. If sending comments through email or fax, please write "SCOQ Excessive Shares Amendment Comments" in the subject line.

All comments, regardless of submission method, will be compiled for review and consideration by the Council. **Please do not submit the same comments through multiple channels.**

Interested members of the public are encouraged to attend any of the following 4 public hearings and to provide oral or written comments at these hearings:

Date and Time	Location (Tentative)
[TBD]	**Hilton Garden Inn Providence Airport** 1 Thurber Street, Warwick, RI 02886. Telephone: (401) 734-9600.
[TBD]	**Webinar** This meeting will be conducted via webinar accessible via the internet from the Council's website, http://www.mafmc.org. Members of the public may also attend in-person at the Council office address (see below) for this webinar meeting, if they contact the Council by July 7, 2017.
[TBD]	**The Grand Hotel** 1045 Beach Avenue, Cape May, NJ 08204. Telephone: (609) 884-5611.
[TBD]	**Ocean Pines Branch Library** 11107 Cathell Road, Berlin, MD 21811. Telephone: (410) 208-4014.

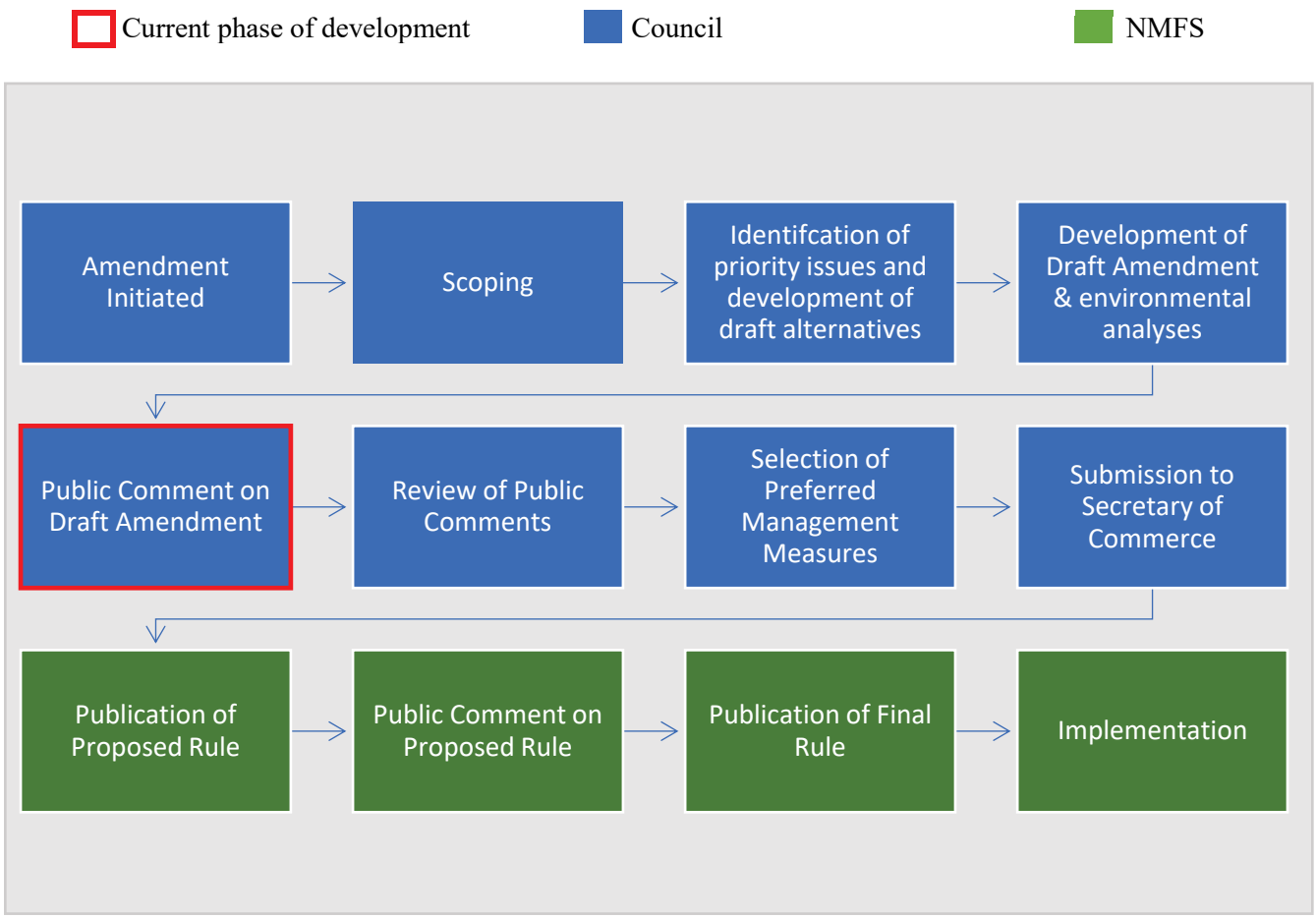
For additional information and updates, please visit: http://www.mafmc.org/actions/scoq-excessive-shares-amendment. If you have any questions, please contact either:

José Montañez, Ph.D., Fishery Management Specialist
Mid-Atlantic Fishery Management Council
302.526.5258

WHAT HAPPENS NEXT?

This document supports a series of public hearings and a public comment period scheduled to take place during May – July 2019. Following public hearings, written and oral comments will be compiled and provided to the Council and Board for review. These comments will be considered prior to taking final action on the amendment, which is tentatively scheduled for August 2019. The Council's recommendations are not final until they are approved or partially approved by the

Secretary of Commerce through the National Marine Fisheries Service, so the timing of full implementation of this action will depend on the federal rulemaking timeline. This rulemaking process is expected to occur in 2020, with revised measures possibly effective during the 2020 fishing year.



ATLANTIC SURFCLAM AND OCEAN QUAHOG EXCESSIVE SHARES AMENDMENT TO THE ATLANTIC SURFCLAM AND OCEAN QUAHOG FISHERY MANAGEMENT PLAN

(Includes Draft Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis)

DRAFT AS OF 05/10/2019

Mid-Atlantic Fishery Management Council

in cooperation with

the National Marine Fisheries Service (NMFS)

Draft adopted by MAFMC: MM-DD-YYYY
Final adopted by MAFMC: MM-DD-YYYY
Draft submitted to NOAA: MM-DD-YYYY
Final approved by NOAA: MM-DD-YYYY

Council Address	**NMFS Address**
Mid-Atlantic Fishery Management Council	**Greater Atlantic Regional Fisheries Office**
800 North State Street, Suite 201	**55 Great Republic Drive**
Dover, DE 19901	**Gloucester, MA 01930**

1.0 EXECUTIVE SUMMARY

This document was prepared by the Mid-Atlantic Fishery Management Council (MAFMC or Council) in consultation with the National Oceanic and Atmospheric Administrations (NOAA) National Marine Fisheries Service (NMFS). This document was developed in accordance with all applicable laws and statutes described in section 8.0.

The purpose of this action (amendment)[1] is to consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog individual transferrable quota (ITQ) privileges. For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive share cap that is intended to prevent a firm or entity from exerting market power.[2] The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

In addition, this amendment may also consider revisions to some or all of the current management objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP). Lastly, this action includes measures to revise the process for specifying multi-year management measures, require periodic review of the excessive share cap level, and allow adjustments to be made under the frameworkable provisions of the FMP.

1.1 Summary of Alternatives

This document details all evaluated management alternatives and their expected impacts on several components of the environment. The alternatives are summarized in Boxes ES-1 to ES-4 below, and described in more detail in sections 5.1 to 5.5.

[1] Amendment number to be added after final action.

[2] An outcome of obtaining market power could be pricing power in either output (product) or input (factor) markets or the ability to disrupt other firms or entities from participating in the market.

Box ES-1. Summary of the excessive shares alternatives. ***The Council needs to choose a specific model and affiliation level to select and/or monitor any particular excessive shares cap level they wish to implement.***

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No limit or definition of an excessive share is included in the FMP.
Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)	A single cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership[3] with unlimited leasing of annual allocation (cage tags) throughout the year (Note: all excessive share alternatives are applicable throughout the year). Since the cap is based on ownership-only, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit.
Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017	The single quota share caps would be based on the highest level of quota share held by an individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 2.2: Quota share cap at 49%	The single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).
Sub-Alternative 2.3: Quota share cap at 95%	The single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by some industry representatives. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly). A 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%).
Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)	A cap based on combined values for quota share ownership plus leasing of annual allocation (cage tags) would be established separately for surfclams and ocean quahogs. Since the cap is based on ownership plus leasing of annual allocation (cage tags), it accounts for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit.
Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017	The combined caps would be based on the highest level of quota share ownership plus leasing of annual allocation (cage tags) by an individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 3.2: Combined cap at 40%	The combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE (Center for Independent Experts) review. A 40% cap could potentially result in a minimum of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%).
Sub-Alternative 3.3: Combined cap at 49%	The combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).

[3] **Quota Share Ownership** means the quota share held by an individual or entity. In a manner of speaking, "ownership" usually represents a property right in perpetuity or for as long as the owner wants. However, under MSA there are some important policy issues with respect to duration in the design of limited access privilege programs (e.g., ITQs). The MSA stipulates that limited access privileges may be revoked or limited in accordance with the Act, they do not confer rights of compensation, and they do not create any ownership of a fish before it is harvested [Section 303A(b)] (NMFS 2007).

Box ES-1 (Continued). Summary of the excessive shares alternatives.

Alternatives	Summary of Alternative
Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)	A two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report.
***Sub-Alternative 4.1*:** Two-part cap based on highest level in the ownership data, 2016-2017	The two-part cap approach (one cap on allocation ownership and one cap on combined [allocation ownership plus leasing of annual allocation or cage tags]) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017 plus 15% added to the maximum levels to allow for additional consolidation	The two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, a 15% for additional consolidation is added to the maximum values reported in the ownership data for the 2016-2017 period. The 15% value for additional consolidation was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate/growth if market conditions allow.
Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%	The two-part cap with an ownership quota share cap at 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report.
Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota	The cap would be 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. A 40% cap could potentially result in a minimum of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%).
Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota	The cap would be 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (annual catch target) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).

Box ES-2. Summary of the excessive shares review alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	There would not be a requirement for periodic review of any implemented excessive share measures.
Alternative 2: Require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed	This alternative would implement a requirement for periodic review of any excessive shares measures that the Council adopts.

Box ES-3. Summary of the framework adjustment process alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No changes to the list of management measures that can be addressed via the framework adjustment process.
Alternative 2: Add modification of the excessive share cap levels to the list of measures to be adjusted via framework	This alternative would allow for the expansion of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive share cap level. This frameworkable item would provide means to make modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to select cap), only if the modification would not result in an entity having to divest.

Box ES-4. Summary of the multi-year management measures alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No changes to the process to set surfclam and ocean quahog management specifications for up to 3 years.
Alternative 2: Allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule	Specifications could be set for a period up to the maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set to cover the time period until a new surflclam and/or ocean quahog assessment is produced.

1.2 Summary of Impacts

The following section presents a summary of the expected impacts (qualitative and/or quantitative) by alternative and cumulative for all evaluated alternatives (Boxes ES-5 to ES-8). The impacts of each alternative, and the criteria used to evaluate them, are described in section 7.0. Impacts are described in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). In section 7.0, the alternatives are compared to current condition of the value ecosystem component (VEC) and also compared to each other. The recent conditions of the VECs include the biological condition of the target stock, non-target stocks, and protected species over most of the recent five years, as well as characteristics of commercial fisheries and associated human communities over the same time frame. The guidelines used to determine impacts to each VEC are described in section 7.0 (see especially Table 16).

The actions proposed through this amendment are largely administrative in nature and are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted. However, these alternatives may have indirect impacts, particularly for the human communities VEC. Anticipated impacts are described below.

1.2.1 Excessive Share Alternatives

Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, they are not expected to impact the target species compared to current conditions. Similarly, since fishing effort is not expected to change under any of the alternatives, it is not expected that there would be any impacts compared to recent conditions. None of the alternatives evaluated are expected to have impacts (direct or indirect) on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

Human Communities/Socioeconomic Impacts

Alternative 1

As previously indicated, none of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or

fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions.

Under alternative 1 (no action/*status quo*) the current management approach regarding excessive shares (i.e., share accumulation) would continue. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. The FMP would rely only on federal anti-trust provisions. The Department of Justice has indicated that their Business Practice Process does provide a pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment. Therefore, this alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0), and a means to track and monitor ownership relative to that definition is needed.

Since alternative 1 does not include a limit or definition of excessive shares accumulation, it could potentially lead to one entity holding 100% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. An excessive share would be a level of quota control that results in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries. Alternative 1 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions.

Alternative 2

Alternative 2 considers a single cap on how much quota one individual or entity could hold. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags). Because alternative 2 is based on ownership-only values, none of the sub-alternatives discussed below account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit.

Note: The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to select and/or monitor any particular excessive shares cap level they wish to implement.[4]

Under Sub-alternative 2.1, the single quota would be based on the highest level of quota share held by any individual or entity reported in the ownership data for each fishery for the 2016-2017 period. The highest level of quota share held by any individual or entity during the 2016-2017 period was 28% for surfclams and 22% for ocean quahogs (regardless of model or affiliation level;

[4] See Definitions and Terminology at the end of Section 2.0 for more information on these choices. More detailed information on these choices is found in sections 5.0 and 7.0.

Tables 2 and 3). A 28% cap for surfclams could potentially result in a minimum (if fully consolidated) of four large entities participating in this fishery (i.e., four large entities at 28%, 28%, 28%, and 16%). A 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in this fishery (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%). This implies at least four entities in the surfclam and five entities in the ocean quahog fisheries, which may provide some protection against excessive share consolidation and associated market power issues.

If the surfclam and ocean quahog cap levels described above (28% and 22%, respectively) had been implemented in 2017, all entities would have fallen at or below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.1 in the surfclam or ocean quahog fisheries. Sub-alternative 2.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues.

Under Sub-alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.2 in the surfclam or ocean quahog fisheries. Sub-alternative 2.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues.

Under Sub-alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by some industry representatives. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly).

It is stated in the Compass Lexecon Report it is possible that under some circumstances an excessive share cap of 100% may be appropriate. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011).

Sub-alternative 2.3 could potentially result in quota accumulation levels that are near identical to those under alternative 1 (*status quo* alternative). Lastly, if one firm or entity controls 95% of the

quota, there would be no market for leasing under the current quota levels for these species, as nearly all the quota would be held by a single entity. Sub-alternative 2.3 could potentially allow for share concentration levels similar to those under the current conditions and as such, it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries.

If the surfclam and ocean quahog cap levels described above (95% for surfclam and 95% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.3 in the surfclam or ocean quahog fisheries. Sub-alternative 2.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions.

Comparisons Across Sub-Alternatives 2.1 to 2.3

In this section a comparison between sub-alternatives 2.1 through 2.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 2.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 2.2 and 2.3. However, in the long-term, alternative 2.1 would have slight positive socioeconomic impacts compared to sub-alternative 2.2, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation. Lastly, sub-alternative 2.1 would have positive socio-economic impacts compared to sub-alternative 2.3, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation (as sub-alternative 2.3 could potentially result in one large entity controlling 95% of the quota for surfclam and/or ocean quahogs).

Sub-alternative 2.2 would have less positive socioeconomic impacts in the long-term compared to sub-alternatives 2.1, as sub-alternative 2.2 has the potential to provide a smaller degree of protection against excessive consolidation. Lastly, sub-alternative 2.2 would have positive socioeconomic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.2 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 2.3 would have negative socioeconomic impacts in the long-term compared to sub-alternatives 2.1 and 2.2, as sub-alternative 2.3 has the potential to provide the smallest degree of protection against excessive consolidation.

In general terms, when ranking these three sub-alternatives, sub-alternative 2.1 would result in the most positive impacts, sub-alternative 2.2 would result in the second most positive impacts, and sub-alternative 2.3 would result in the least positive impacts.

Alternative 3

Alternative 3 considers a combined cap – combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex business practices that occur in these fisheries, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

Under Sub-alternative 3.1, the cap would be based on the highest level of combined cap held by any individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. Under sub-alternative 3.1, depending on the affiliate level and model selected, the combined cap for surfclam could be as low as 28% under the net actual percentage model (at the individual/business level) or as high as 49% under the cumulative 100% model (at the corporate officer level; Tables 2 and 19). Based on these combined cap values, sub-alternative 3.1 could result in a minimum number of large entities in the surfclam fishery ranging from four under the net actual percentage model to two under the cumulative 100% model (Table 19). Under this alternative, depending on the affiliate level and model selected, the combined cap for ocean quahogs could be as low as 29% under the net actual percentage model (at the individual/business level) or as high as 41% under the cumulative 100% model (at the corporate officer level; Table 3 and 19). For ocean quahogs, this sub-alternative could result in a minimum number of large entities ranging from four under the net actual percentage model to three under the cumulative 100% model (Table 19).

If the surfclam and ocean quahog combined cap levels described above had been implemented in 2017, all entities would have fallen below those combined caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the combined cap levels under sub-alternative 3.1 in the surfclam or ocean quahog fisheries. Sub-alternative 3.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues.

Under Sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). “In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails.” And “An excessive-share cap of 40% assures [ensure] that there would be at least three processors operating at reasonable output levels” (Walden 2011). A 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those combined caps under the net actual percentage model for both surfclams and ocean quahogs. However, under the cumulative 100% model, between one (1% of all entities) and three (4% of all

entities) surfclam entities and between one (2% of all entities) and four (9% of all entities) ocean quahog entities would have had combined cap above these levels depending on the affiliation level (Table 19).

In general terms, sub-alternative 3.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. However, as indicated above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model,) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Under Sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.2 in the surfclam or ocean quahog fisheries (Table 19).

Sub-alternative 3.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues.

Comparisons Across Sub-Alternatives 3.1 to 3.3

In this section a comparison between sub-alternatives 3.1 through 3.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 3.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 3.2 and 3.3. In the long-term, alternative 3.1 would have no socioeconomic impacts in the long-term compared to sub-alternative 3.2, because they both could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 19). The exception to this generalization would be sub-alternative 3.1 under the cumulative

100% model which would result in two large entities participating in the surfclam fishery, and as such, provides a lesser degree of protection against excessive consolidation. As such, this results in long-term positive impacts that are smaller in magnitude. Lastly, in general terms, sub-alternative 3.1 would have positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.1 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 3.2 would have slight positive socioeconomic impacts in the long-term compared to sub-alternatives 3.3, as sub-alternative 3.2 has the potential to provide a larger degree of protection against excessive consolidation. However, as noted above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model,) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Sub-alternative 3.3 would have slightly less positive socioeconomic impacts in the long-term compared to sub-alternatives 3.1 and 3.2, as sub-alternative 3.3 has the potential to provide a smaller degree of protection against excessive consolidation.

In general terms, when ranking these three sub-alternatives, sub-alternative 3.1 would result in the most positive impacts, sub-alternative 3.2 would result in the second most positive impacts, and sub-alternative 3.3 would result in the least positive impacts.

Alternative 4

Alternative 4 considers a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Mitchell et al. (2011) indicated that "the preference for short-term accumulations in the two-part cap limits the share of long-term quota controlled by any single party, which limits the ability to foreclose competitors by withholding quota on a committed multiseason basis." Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex business practices that occur in this fisheries.

Under Sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage

tags) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period.

Under sub-alternative 4.1, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 28% ownership / 28% combined under the net actual percentage model (at the individual/business level) or as high as 28% ownership / 49% combined under the cumulative 100% model (at the corporate officer level; Tables 2 and 20). Based on these combined cap values, sub-alternative 4.1 could result in a minimum number of five large entities in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 22% ownership / 29% combined under the net actual percentage model (at the individual/business level) or as high as 22% ownership / 41% combined under the cumulative 100% model (at the corporate officer level; Tables 3 and 20). For ocean quahogs, this sub-alternative could result in a minimum number of five large entities in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries. Sub-alternative 4.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. In addition, since this alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota

Under Sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for the 2016-2017 period to allow for additional consolidation (Table 20). The 15% value to allow for additional consolidation was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow.

Under sub-alternative 4.2, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 43% ownership / 43% combined under the net actual percentage model (at the individual/business level) or as high as 43% ownership / 64% combined under the cumulative 100% model (at the corporate officer level; Table 20). Based on these combined cap values, sub-alternative 4.1 could result in a minimum number of five large entities in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 37% ownership / 44% combined under the net actual percentage model (at the individual/business level) or as high as 37% ownership / 56% combined under the cumulative 100% model (at the corporate officer level; Table 20). For ocean quahogs, this sub-alternative could result in a

minimum number of five large entities in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries. Sub-alternative 4.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. In addition, since this alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Under Sub-alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. A 30% ownership cap and a 60% combined cap (quota share ownership plus leasing of annual allocation or cage tags) could potentially result in a minimum of four large entities participating in the fisheries (i.e., 30%, 30%, 30%, 10%; Table 20).

If the surfclam and ocean quahog two-part cap levels described above (i.e., 30%/60%) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.3 in the surfclam or ocean quahog fisheries (Table 20). Sub-alternative 4.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. In addition, since this alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Comparisons Across Sub-Alternatives 4.1 to 4.3

In this section a comparison between sub-alternatives 4.1 through 4.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

In general terms, sub-alternatives 4.1, 4.2, and 4.3 are likely to have neutral socioeconomic impacts (e.g., similar magnitude and direction) in the short-term and long-term, because they all could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 20). As such, they all have the potential to provide a relatively similar degree of protection against excessive consolidation.

Alternative 5

Alternative 5 considers a cap on quota share ownership-only of 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

The 40% cap is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures [ensure] that there would be at least three processors operating at reasonable output levels" (Walden 2011).

A 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 21). If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 21). As such, no entity would have been constrained by the cap levels under alternative 5 in the surfclam or ocean quahog fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase. In addition, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. As a result, this additional leasing could result in processors paying more in financial cost (due to additional leasing costs). There may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. Alternative 5 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues.

Alternative 6

Alternative 6 considers a cap on quota share ownership-only of 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing combined. The only difference between alternatives 5 and 6 are the cap levels on quota share ownership, all other aspects of the alternatives are identical.

A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%). If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office). As such, no entity would have been constrained by the cap levels under alternative 6 in the surfclam or ocean quahog fisheries. Alternative 6 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues.

Comparisons Across All Excessive Shares Alternatives

In general terms, alternatives 5 and 6 would result in the largest positive impacts, alternatives 3 and 4 would result in the second highest positive impacts, alternative 2 would result in the third highest positive impacts, and alternative 1 would result in the least positive impacts. More detail of the expected impacts is provided below.

Alternative 1 (No Action)

As previously indicated, under alternative 1 (no action) no limit or definition of excessive shares accumulation is included in the FMP. This alterative is expected to result in impacts ranging from no impacts in the short-term to negative impacts in the long-term when compared to alternatives 2 through alternative 6, because alternative 1 provides no protection against excessive consolidation. The exception would be when alternative 1 is compared to sub-alternative 2.3, as sub-alternative 2.3 could potentially allow for share concentration levels similar to those under alternative 1, and it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Compared to sub-alternative 2.3, alternative 1 is likely to have a similar magnitude of socioeconomic impacts (i.e., neutral).[5]

[5] Since sub-alternative 2.3 is likely to result in impacts similar to those under alternative 1, all other comparisons involving alternative 2 exclude sub-alternative 2.3, with the understanding that when comparisons are made with sub-alternative 2.3 exclusively, impacts would be similar to those under alternative 1 (no action).

None of the excessive share alternatives discussed in this document are expected to impact the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. As previously indicated, the actions proposed through this amendment are largely administrative in nature and are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted. However, these alternatives may have indirect impacts, particularly for the human communities VEC.

Alternative 2

Alternative 2 would implement a single cap based on quota share ownership-only with unlimited leasing of annual allocations (cage tags). Because alternative 2 is based on ownership-only values, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This alternative would limit the exercise of market power through capping ownership levels for surfclams and ocean quahogs, but it does not address the creation or exercise of market power through contractual control of quota.

Alternative 2 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive share consolidation and associated market issues. Compared to alternative 3 and alternative 4, alternative 2 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternatives 3 and 4).

Lastly, alternative 2 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market.

Alternative 3

Alternative 3 would implement a combined cap based on quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex business practices that occur in these fisheries.

Alternative 3 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against

excessive share consolidation and associated market issues. Compared to alternative 2, alternative 3 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 3). Compared to alternative 4, alternative 3 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 3 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market.

Alternative 4

Alternative 4 would implement a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex business practices that occur in these fisheries.

Alternative 4 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive share consolidation and associated market issues. Compared to alternative 2, alternative 4 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 4). Compared to alternative 3, alternative 4 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 4 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market.

Alternative 5

Alternative 5 would implement a cap on quota share ownership-only with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Alternative 5 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because alternative 5 not only addresses the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also aligns supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market. For these same reasons, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) compared to alternatives 2, 3, and 4, but likely larger in magnitude. Lastly, compared to alternative 6, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market. However, under alternative 5, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. As a result, this additional leasing could result in processors paying more in financial cost (due to additional leasing costs). There may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Alternative 6

The expected impacts under alternative 6 are similar to those described under alternative 5 above.

1.2.2 Excessive Shares Review Alternatives

Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would not be a requirement for periodic review of any implemented excessive shares measures. Alternative 2, would implement a requirement for periodic review of any excessive shares measures that the Council adopts. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels (and expected ex-vessel revenues), fishery distribution, or fishing methods and practices. However, conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions will likely change in the future. Therefore, an excessive shares measure established at an appropriate level could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry). Thus, not having a mechanism in place to review the effectiveness of any implemented excessive shares measures (alternative 1) could result in socioeconomic impacts that range from no impacts (if implemented excessive shares measures or cap level is appropriate through time) to slight negative (if implemented excessive shares measures or cap level is not appropriate through time) when compared to current conditions.

Alternative 2, is also administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. As with the no action alternative above, alternative 2 is not expected to have impacts on the quantity of surfclam or ocean quahog landings, including revenues. However, this alternative requires periodic review of any excessive shares measures that the Council adopts. This alternative would implement a periodic review of regulations to protect against market power or other anticompetitive behavior in these fisheries in a timely manner. Alternative 2 is expected to result in socioeconomic impacts ranging from no impacts to slight positive when compared to current conditions. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts as it allows for a proactive review of any excessive management shares management measure(s) implemented by the Council. While it is not possible to anticipate the potential management costs associated with alternative 2, they are likely to be higher than those associated with alternative 1. Costs will depend on the complexity and scope of the review process.

1.2.3 Framework Adjustment Process Alternatives

Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would not be changes to the list of management measures that can be addressed via the framework adjustment process. Alternative 2 would allow for the expansion of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive share cap level. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels (and expected ex-vessel revenues), fishery distribution, or fishing methods and practices. However, alternative 1 (no action) would not allow the excessive shares cap to be modified via the framework adjustment process. The Council would still have the prerogative to review any adopted excessive shares measures and make modifications to any implemented excessive cap level through an amendment if it becomes inefficiently high or low through time as fisheries conditions change. However, making modifications to existing regulations using an amendment process typically requires more work and time compared to a framework process. Not having the flexibility to make minor modifications to the excessive share cap level (no action alternative) could result in socioeconomic impacts ranging from no impact to slightly negative when compared to current conditions. Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive share cap level to the list of frameworkable actions in the FMP. The proposed alternative would provide flexibility to address potential modifications to any implemented excessive cap level (i.e., cap value only and not underlaying cap system) if it becomes inefficiently high or low through time as fisheries conditions change. Alternative 2 is expected to result in socioeconomic impacts that range from no impact to slight positive when compared to current conditions. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts because this alternative provides the flexibility to adjust potential modifications to any implemented excessive cap level if it becomes inefficiently or low through time as fisheries conditions change.

1.2.4 Multi-Year Management Measures Alternatives

Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. Alternative 2 would allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources. Although there are no impacts on the VECs, alternative 2 would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process).

Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and would therefore have no impacts on human communities (i.e., socioeconomic impacts).

Box ES-5. Summary of the expected impacts of excessive shares alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact in the short-term to - in the long-term if consolidation patterns result in decreased competition. Could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.
Alternative 2 Sub-alternative 2.1	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues. Cap based on ownership-only)
Alternative 2 Sub-alternative 2.2	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues. Cap based on ownership-only)
Alternative 2 Sub-alternative 2.3	No Impact	No Impact	No Impact	No impact in the short-term to - in the long-term if consolidation patterns result in decreased competition. (Cap based on ownership-only). Could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.
Alternative 3 Sub-alternative 3.1	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota)
Alternative 3 Sub-alternative 3.2	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota). If implemented in 2017, this sub-alternative would had constrained 4 entities, incurring slight negative socioeconomic impacts in the short-term and long-term.

Alternative 3 Sub-alternative 3.3	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota)

Box ES-5 (Continued). Summary of the expected impacts of excessive shares alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 4 Sub-alternative 4.1	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues). Cap on ownership and combined cap (ownership + leasing)
Alternative 4 Sub-alternative 4.2	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues). Cap on ownership and combined cap (ownership + leasing)
Alternative 4 Sub-alternative 4.3	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues). Cap on ownership and combined cap (ownership + leasing)
Alternative 5	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues. Aligns supply in the fisheries with market demand). However, alternative could result in processors paying more in financial cost (due to additional leasing costs), thus resulting in negative socio economic impacts in the short-term and long-term. There may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market

Alternative 6	No Impact	No Impact	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive share consolidation and associated market power issues. Aligns supply in the fisheries with market demand). However, alternative could result in processors paying more in financial cost (due to additional leasing costs), thus resulting in negative socio economic impacts in the short-term and long-term. There may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market

Box ES-6. Summary of the expected impacts of excessive shares review alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact to slight -
Alternative 2	No Impact	No Impact	No Impact	No impact to slight +

Box ES-7. Summary of the expected impacts of framework adjustment process alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact to slight -
Alternative 2	No Impact	No Impact	No Impact	No impact to slight +

Box ES-8. Summary of the expected impacts of multi-year management alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No Impact
Alternative 2	No Impact	No Impact	No Impact	No Impact

2.0 LIST OF FREQUENTLY USED ACRONYMS, CONVERSIONS, AND DEFINITIONS

Frequently Used Acronyms

ABC	Acceptable Biological Catch
ACT	Annual Catch Target
bu	Bushels
CEA	Cumulative Effects Assessment
COE	Chief Executive Officer
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIE	Center for Independent Experts
cm	Centimeter (0.393 inches)
CSP	Catch Share Programs
DOJ	U.S. Department of Justice
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EMUs	Ecological Marine Units
EO	Executive Order
ESA	Endangered Species Act
F	Fishing Mortality Rate
FMAT	Fishery Management Action Team
FMP	Fishery Management Plan
FR	Federal Register
FONSI	Finding of No Significant Impact
GAO	Government Accountability Office
GARFO	Greater Atlantic Regional Fisheries Office
GB	Georges Bank
GOM	Gulf of Maine
HMA	Habitat Management Areas
IBQ	Individual Bluefin Quota
IFQ	Individual Fishing Quota
ITQ	Individual Transferrable Quota
k	Kilometer (0.621 miles)
LAPP	Limited Access Privilege Program
LPUE	Landings Per Unit of Effort
m	Meter (3.280 feet)
MAFMC	Mid-Atlantic Fishery Management Council (Council)
MFP	Multi-factor Productivity
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NRCC	Northeast Regional Coordinating Council
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NS	National Standard
OHA2	Omnibus Essential Fish Habitat Amendment 2 (NEFMC)
OFL	Overfishing Limit
OY	Optimal Yield

P, Pr, RFF	Past, Present, Reasonably Foreseeable Future
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
PSP	Paralytic Shellfish Poisoning
R	Recruitment
R_0	Recruitment in an Unfished Stock
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SBA	Small Business Administration
SSB	Spawning Stock Biomass
SSC	Scientific and Statistical Committee
SASI	Swept Area Seabed Impact
U.S.	United States
VEC	Valued Ecosystem Component
VMS	Vessel Monitoring Systems
WGOM	Western Gulf of Maine

Conversions

1 metric ton (mt) = 2,204.622 pounds (lb); 1 kilometer = 0.621 miles; 1 meter (m) = 3.280 feet (ft); 1 centimeter (cm) = 0.393 inches; 1 Maine bushel = 11 lb meats (1.2445 ft^3); 1 Atlantic surfclam bushel = 17 lb meats (1.88 ft^3) ; 1 ocean quahog bushel = 10 lb meats (1.88 ft^3). Number of bushels divided by 32 = number of cage tags.

Definitions and Terminology

Annual Allocation/Cage Tags: for each species (surfclam and ocean quahogs), the initial allocation for the next fishing year is calculated by multiplying the quota share percentage held by each ITQ permit holder by the quota specified by the Regional Administrator. The total number of bushels of annual allocation is divided by 32 to determine the appropriate number of cage tags to be issued to allocation holders.

Atlantic Surfclam and Ocean Quahog Information Collection Program Data: Requirements became effective on January 1, 2016. The Atlantic Surfclam and Ocean Quahog Information Collection Program was implemented at the request of the Council to provide additional information about corporate ownership and other forms of control of allocations. This information would allow managers to better characterize the current levels of ownership concentration to assist in defining an excessive share, and to monitor and enforce any future restriction on share levels in the fisheries.

Excessive Share: For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive share cap that is intended to prevent a firm or entity from exerting market power. The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

ITQ: A from of output control in which harvesting privileges are allocated to individual fishermen.

ITQ Quota Share: Percent of the total quota held by each ITQ permit holder.

National Standards (NS): The National Standards are principles that must be followed in any fishery management plan to ensure sustainable and responsible fishery management. As mandated by the Magnuson-Stevens Fishery Conservation and Management Act, NOAA Fisheries has developed guidelines for each National Standard. When reviewing fishery management plans, plan amendments, and regulations, the Secretary of Commerce must ensure that

they are consistent with the National Standard guidelines. See section 8.0 of this document for more detail on the 10 National Standards under the MSA. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 4–Allocations: Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (a) fair and equitable to all such fishermen; (b) reasonably calculated to promote conservation; and (c) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privilege. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 5–Efficiency: Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 8–Communities: Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirement of paragraph (2) [i.e., National Standard 2], in order to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

Ownership Data: this term is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data (see below)."

Quota Share Ownership: means the quota share held by an individual or entity. In a manner of speaking, "ownership" usually represents a property right in perpetuity or for as long as the owner wants. However, under MSA there are some important policy issues with respect to duration in the design of limited access privilege programs (e.g., ITQs). The MSA stipulates that limited access privileges may be revoked or limited in accordance with the Act, they do not confer rights of compensation, and they do not create any ownership of a fish before it is harvested [Section 303A(b)] (NMFS 2007).

Transferability Rules: allow ITQ allocation holders to buy, sell, give away (permanent transfer of ITQ quota share) or lease their privileges (temporary transfer of cage tags). When quota is leased out, cage tags are temporarily transferred from the ITQ quota allocation holder (lessor) to the person leasing cage tags (lessee).

Two-Tier Quota: Quota system that aligns supply in the fisheries with market demand (used under excessive share alternatives 5 and 6). Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Models for determination of quota ownership (or share totals for ownership quota share) and combined level (ownership plus leasing of cage tags):

Owner Percentage Models (*Models for determination of quota ownership (or share totals for ownership quota share) and combined level (ownership plus leasing of cage tags)*:

Net Actual Percentage Model - Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

Cumulative 100% Model - Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and

quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels:

Individual/Business Level - smallest unit at the individual level or business (if an individual owner cannot be identified);

Family Level **(individual / business level + family level)*** - includes any family associations that are not already accounted at the individual business level ; and,

Corporate Officer Level **(individual / business level + family level + corporate officer level)** - includes association through corporate officer's that are not accounted for in the other levels.

*On the "Surfclam/Ocean Quahog Individual Transferable Quota (ITQ) Ownership Form," *Immediate Family* is defined as: Father, mother, husband, wife, son, daughter, brother, sister, grandfather, grandmother, grandson, granddaughter, father-in-law, or mother-in-law (https://www.greateratlantic.fisheries.noaa.gov/aps/forms.html).

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4.0 INTRODUCTION AND BACKGROUND

This document was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA)[6] and National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ), and the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP). The management regime and objectives of the fisheries are detailed in the FMP, including any subsequent amendments are available at: http://www.mafmc.org, and briefly described below.

4.1 PURPOSE AND NEED OF THE ACTION

The primary purpose of this action is to implement measures under the MSA to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. National Standard 4 states that '*... If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges*.' In 1990 Amendment 8 implemented the ITQ program for the Atlantic surfclam and ocean quahog fisheries. Amendment 8 did not include a specific cap or measures that limited the maximum amount of shares that could be owned by an individual, corporation, or entity (MAFMC 1988).

In the 27 years since the implementation of the ITQ program, the number of firms or entities participating in these two fisheries have declined and action is needed to avoid excessive share concentration by defining what constitutes an excessive share in the Atlantic surfclam and ocean quahog ITQ privileges to ensure the FMP is in compliance with the MSA. In 2016, a new data collection protocol was implemented by NMFS that allows managers to better assess quota ownership and concentration levels.[7]

For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive share cap that is intended to prevent a firm or entity from exerting market power. The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense

[6] Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSRA), and available at: http://www.nmfs.noaa.gov/sfa/magact/MSA_Amended_2007%20.pdf

[7] Atlantic Surfclam and Ocean Quahog Information Collection Program Requirements became effective on January 1, 2016. The Atlantic Surfclam and Ocean Quahog Information Collection Program was implemented at the request of the Council to provide additional information about corporate ownership and other forms of control of allocations. This information would allow managers to better characterize the current levels of ownership concentration to assist in defining an excessive share, and to monitor and enforce any future restriction on share levels in the fisheries.

of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

In addition, this action includes revisions to the goals and objectives of the FMP. The Council is undergoing a process to review and possibly revise goals and objectives for all its managed fisheries and FMPs. The Council initiated a process to consider revised goals and objectives for the FMP in support of its 2014-2018 Strategic Plan and 2017 Implementation Plan (http://www.mafmc.org/strategic-plan). This initiative allows the Council to revisit and possibly "refresh" FMP goals and objectives to ensure that they are consistent with today's fisheries and management issues. The issue is included in the Excessive Shares Amendment to take advantage of efficiencies in timing and public review.

Lastly, this action includes measures to revise the process for specifying multi-year management measures. This action would allow multi-year management measures to be set for a maximum number of years consistent with the approved NRCC stock assessment schedule. This approach is expected to provide for better consistency and administrative efficiency. This action would also require periodic review of the excessive cap share level to be made and allow adjustments to the frameworkable provisions in the FMP.

There are currently 16 limited catch shares programs in the country. 13 of these programs have specific excessive shares cap limits. Two other programs do not specify an excessive shares cap limit, but they have other measures in place to avoid excessive accumulation of share or allocation. The surfclam and ocean quahog fisheries are the only federally-managed fisheries in the country that do not have measures to limit share accumulation.[8] See Appendix A for additional information for catch shares programs in the USA.

4.2 FMP OBJECTIVES

4.2.1 Current FMP Objectives

The original FMP objectives were adopted through Amendment 8 to the Atlantic Surfclam and Ocean Quahog FMP, which implemented the ITQ system in 1990 (MAFMC 1988). The FMP objectives have remained unchanged since that time. This amendment proposed modification of objectives. The current FMP objectives are as follows:

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirements of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in

[8] Section 303A of the MSA has additional requirements for catch share programs adopted after January 12, 2007.

balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

After the ITQ system for the clam's fisheries was implemented in 1990, the Regional Administrator granted experimental status to the small-scale eastern Maine ocean quahog fishery that was operating in the EEZ. Amendment 10 fully integrated the Maine fishery into the Atlantic Surfclam and Ocean Quahog FMP. The specified objectives under Amendment 10 (MAFMC 1998a) did not change the overall FMP objectives adopted under Amendment 8. Specified FMP objectives for the eastern Maine ocean quahog fishery under Amendment 10 are as follows:

1. Protect the public health and safety by the continuation of the State of Maine's PSP (Paralytic Shellfish Poisoning) monitoring program for ocean quahogs harvested from the historical eastern Maine fishery.
2. Conserve the historical eastern Maine portion of the ocean quahog resource.
3. Provide a framework that will allow the continuation of the eastern Maine artisanal fishery for ocean quahogs.
4. Provide a mechanism and process by which industry participants can work cooperatively with Federal and State management agencies to determine the future of the historical eastern Maine fishery.

4.2.2 Proposed Revisions to FMP Objectives

As indicated in section 4.1, the Council is undergoing a process to review and revise goals and objectives for all their managed fisheries and FMPs. The Council initiated a process to consider revised goals and objectives for the Atlantic Surfclam and Ocean Quahog FMP in support of the 2014-2018 Strategic Plan and 2017 Implementation Plan. This initiative allows the Council to revisit and possibly "refresh" FMP goals and objectives to ensure that they are consistent with today's fisheries and management issues. The consideration of revising the FMP goals and objectives is separate from the Council's consideration of excessive share measures. This issue is included in the Excessive Shares Amendment to take advantage of efficiencies in timing and other resources.

Feedback and industry input on the FMP goals and objectives were gathered in a two-stage process. First, when the Council conducted scoping hearings to solicit public input on the development of the Excessive Shares Amendment, feedback on FMP goals and objectives was also gathered. Second, the Council contracted with the Fisheries Leadership & Sustainability Forum (Fisheries Forum) to develop a process to support the Council's review of FMP goals and objectives. The Fisheries Forum collected feedback from the Council's Surfclam and Ocean Quahog Committee, the Council's Surfclam and Ocean Quahog Advisory Panel, and state agency representatives from states engaged in the fisheries that were not represented on the Committee (Maine and Massachusetts). The Fisheries Forum synthetized all feedback gathered to identify major ideas and themes of discussion. The Council's Surfclam and Ocean Quahog FMAT reviewed this information and developed recommendations for new FMP goals and objectives. The Council

reviewed the FMAT recommendations at the October 2017 Council meeting. The Council approved the FMAT recommendations for inclusion in the public hearing document for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment. These recommendations are listed below. For additional details on the rationale for these recommendations see Appendix B.

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.

Objective 2.1: Promote compatible regulations between state and federal entities.

Objective 2.2: Promote coordination with the New England Fishery Management Council.

Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.

Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.

Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.

Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.

Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

4.3 MANAGEMENT UNIT

The management unit is all Atlantic surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) in the Atlantic EEZ. Amendment 10 also established a management regime specific to the eastern Maine fishery for a zone north of 43° 50' north latitude.

4.4 AMENDMENTS AND OTHER FMP MODIFICATIONS

The Council has been involved in surfclam and ocean quahog management since its first Council meeting (September 1976). An overview of the original FMP, amendments, and framework actions that have affected management of surfclams and ocean quahogs are summarized in Table 1. These actions are available on the Council's website at: http://www.mafmc.org/.

Table 1. Summary of the history of the Atlantic Surfclam and Ocean Quahog FMP.

Year Approved	Document	Management Action(s)
1977	Original FMP	- Established management of surfclam and ocean quahog fisheries through September 1979 - Established quarterly quotas for surfclams - Established annual quotas for ocean quahogs - Established effort limitation, permit, and logbook provisions - Instituted a moratorium on entry into the surfclam fishery for one year to allow time for the development of an alternative limited entry system such as a "stock certificate" program
1979	Amendment 1	- Extended management authority through December 31, 1979 - Maintained the moratorium
1979	Amendment 2	- Extended the FMP through the end of 1981 - Divided the surfclam portion of the management unit into the New England and Mid-Atlantic Area - Introduced a "bad weather make up day" - Maintained the moratorium in the Mid-Atlantic Area
1981	Amendment 3	- Extended the FMP indefinitely - Imposed a 5.5" surfclam minimum size limit in the Mid-Atlantic Area - Expanded the surfclam fishing week in the Mid-Atlantic Area to Sunday - Thursday from Monday – Thursday - Established a framework basis for quota setting - Proposed a permit limitation system to replace the moratorium which was disapproved by NMFS - NMFS extended the moratorium
1984	Amendment 4 (Not approved)	- Amendment 4 was implemented on an emergency basis for 180 days beginning 1 July 1984 - Provided that any unharvested portion of a bimonthly allocation be added to the immediately following bimonthly allocation rather than being prorated over all remaining bimonthly periods and that trip and weekly limits be by vessel classes based on relative fishing power - NMFS subsequently determined that the document was not structurally complete for review
1985	Amendment 5	- Allowed for revision of the surfclam minimum size limit provision - Extended the size limit throughout the entire fishery - Instituted a requirement that cages be tagged
1986	Amendment 6	- Divided the New England Area into the Nantucket Shoals and Georges Bank Areas, the dividing line being 69° W Longitude - Combined the provisions of Amendment 4 with the Mid-Atlantic Council's Amendment 6 into one document - Replaced the bimonthly quotas with quarterly quotas - Eliminate the weekly landing limits for the Nantucket Shoals Area - Clarified the quota adjustment provisions for the Nantucket Shoals and Georges Bank Areas - Established one landing per trip provision

Table 1 (Continued). Summary of the history of the Atlantic Surfclam and Ocean Quahog FMP.

Year Approved	Document	Management Action(s)
1987	Amendment 7	- Changed the quota distribution on Georges Bank to equal quarterly quotas - Revised the roll over provisions
1990	Amendment 8	- Replaced the regulated fishing time system in the surfclam and ocean quahog fisheries with an individual transferable quota (ITQ) system
1996	Amendment 9	- Revised the overfishing definitions for surfclams and ocean quahogs in response to a scientific review by NMFS
1998	Amendment 10	- Provided management measures for the small artisanal fishery for ocean quahogs (mahogany clams) off the northeast coast of Maine
1998	Amendment 11	- Achieved consistency among Mid-Atlantic and New England FMPs on vessel replacement and upgrade provisions, permit history transfer and splitting and renewal regulations for fishing vessels issued Northeast Limited Access Federal Fishery permits
1999	Amendment 12	- Brought the FMP into compliance with the new and revised National Standards and other requirements of the 1996 Sustainable Fisheries Act - Established a framework adjustment process - Implemented an Operator Permit requirement for fishermen that did not already have them for other fisheries - The Regional Administrator partially approved Amendment 12 with the exceptions of the proposed surfclam overfishing definition and the fishing gear impacts to (Essential Fish Habitat) EFH section
2003	Amendment 13	- Addressed various disapproved sections of Amendment 12
2007	Amendment 14	- Standardized bycatch reporting methodology
2007	Framework 1	- Addressed issues related to Vessel Monitoring Systems (VMS) and enforcement
2011	Amendment 16	- Established Annual Catch Limits (ACLs) and Accountability Measures (AMs)
2015	Amendment 15	- Standardized Bycatch Reporting Methodology
2015	Amendment 18	- Eliminated the requirement for vessel owners to submit "did not fish" reports for the months or weeks when their vessel was not fishing - Removed some of the restrictions for upgrading vessels listed on Federal fishing permits
2016	Amendment 17	- Established a cost recovery program for the individual transferable quota (ITQ) fishery, as required by the MSA - Removed the optimum yield ranges from the management plan and changed how biological reference points are incorporated into the FMP

4.5 HISTORY OF THE ACTION

Court Case

The final rule implementing the surfclam and ocean quahog ITQ program became effective on September 30, 1990. Almost immediately, lawsuits were filed by groups of harvesters and processors challenging various features of the program, most notably the formula for allocating fishing privileges among fishery participants. The case *Sea Watch International v. Mosbacher* [Secretary of Commerce], 762 F. Supp. 370 (D.D.C. 1991), illustrates the major legal challenges

to the initial allocation. In general, the plaintiffs in the case argued that the initial allocation was not fair and equitable and therefore in violation of National Standard 4 of the MSA and,

"The plaintiffs claimed that the initial allocation allowed particular individuals, corporations, or other entities to acquire an excessive share of fishing privileges. Plaintiffs alleged that the allocation would concentrate 40 percent of the annual catch quota for the ocean quahog fishery in two fishermen, and that fragmentation of the remaining shares would result in further consolidation as holders of small shares sold their interests, creating an impermissible restraint on competition.[9] *"*

The court noted the 40 percent number "does give pause" but found the MSA has no definition of the term "excessive shares" and that the judgment of NMFS of what is excessive "deserves weight." Further, the court stated, "Even if the raw number measured a true economic market - which is by no means clear - a judgment of undue concentration could not be based on the mere existence of such a share possessed by the two largest participants." With that, the court dismissed the plaintiffs' argument.

Tracking Excessive Shares Concentration Following ITQ Plan Implementation

During the development of Amendment 8, the Council discussed in detail the requirements under National Standard 4.[10] During those discussions, the Council was advised by NOAA General Counsel (GC) that in order to address part (C) of National Standard 4, there was no legal requirement to put a specific cap (numeric cap) into Amendment 8. GC indicated that a cap is simply a tool to address the National Standard 4 part (C) and that if the Council could come up with an equally effective mechanism to meet that requirement, they could use that mechanism. The Council's intent under Amendment 8 was to have NMFS annually monitor the concentration of ITQ (as ITQ owners have to apply to NMFS to transfer ITQ) and if it seemed that excessive consolidation was occurring (i.e., an excessive share was being amassed), they would advise the U.S. Department of Justice (DOJ), which would then determine if antitrust laws were being violated.

As such, during the early period of the of the implementation of Amendment 8, the Council believed that NMFS could effectively monitor the concentration of ITQ ownership.

While the court case upheld Amendment 8 in 1991 - one year after the ITQ was implemented - it became clear over time to NMFS that this administrative process did not work.[11] The creation of new business entities (e.g., LLC's, etc.) with ITQ ownership, and the lack of a regulatory

[9] Northern Economics, Inc. 2019. Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council. March 2019.

[10] National Standard 4 states that '*... If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges*.'

[11] As noted in the *Sea Watch International* case, even though the initial ITQ program relied upon existing antitrust law to define excessive shares, NMFS and the Council retained the ability to modify the FMP and associated regulations, "without the permission of the ITQ holders." 762 F. Supp. at 380.

mechanism (by NMFS) to identify corporate ownership or business partnerships across individuals or entities involved hampered the ability to determine whether there was a concentration of quota ownership, and whether competitive conditions were being eroded in the quota share market over time.[12] Therefore, the review of industry concentration could not be conducted.

NMFS recognized they could no longer conclude that the ITQ program was carried out in such a manner to prevent someone from acquiring an excessive share of the fishing privileges and advised the Council of these concerns. GC indicated that the Council needed to put at least two regulatory components in place: one to identify the individuals behind the corporate entities listed as the owner of the ITQ, and an ownership cap or other control mechanism to keep individuals from acquiring the level of ITQ ownership that the Council deems to be "excessive." It is important to recognize that MSA did not address this issue by incorporating definitions from antitrust law or simply relying on enforcement of antitrust law. Rather, MSA used the term "excessive share" - a term left undefined in the statute. As noted in a 2007 NMFS[13] guidance document on limited access privilege programs, while share levels exceeding antitrust standards would clearly represent an excessive share, factors such as other MSA requirements and National Standards can lead a Council to a more restrictive share limit than antitrust law may otherwise permit.

During the development of alternatives for the Excessive Shares Amendment, staff at the Council and GARFO (including GC) spoke with the Antitrust Division of the DOJ about the role that they might play in the monitoring of excessive shares in the surfclam and ocean quahog fisheries. The DOJ indicated that their Business Review Process does provide pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process[14] has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment, making it an unfeasible vehicle for ongoing monitoring of quota share ownership.[15] For additional steps taken by the Council and NMFS regarding the excessive shares issue, see *History of this Action* below.

History of this Action

This section presents in chronological order major steps taken by the Council and/or NMFS in addressing the excessive shares issue.

1990

- Surfclam and ocean quahog ITQ program is implemented.

[12] For example, one person could form a couple of corporations and hold and acquire ITQ and it could not be determined whether or not this represented an excessive share since the ITQs would appear to be owned by legally separate entities.
[13] NOAA Technical Memorandum NMFS-F/SPO-86, The Design and Use of Limited Access Privilege Programs, at 53-60 (NMFS 2007).
[14] For a detailed description of the Business Review process of the DOJ see: https://www.justice.gov/atr/business-reviews
[15] Sarah Heil, letter to Chis Moore, PhD, June 1, 2018.

2002

- Discussion of excessive shares in these fisheries began as early as December 2002 with a Government Accountability Office[16] (GAO) report "Individual Fishing Quotas: Better Information Could Improve Program Management." The December 2002 GAO report stated:
  - Surfclam and ocean quahog quota consolidation is greater than NMFS data indicate. According to NMFS officials and others knowledgeable about the fishery, the quota holder of record (i.e., the individual or entity under whose name the quota is listed) is often not the entity that controls the use of the quota. Some families hold quota under the names of more than one family member; some parent corporations hold quota under the names of one or more subsidiaries; some entities hold quota under the name of one or more incorporated vessels; and some financial institutions serve as transfer agents and hold quota on behalf of others or in lieu of collateral for loans.
  - The governing rules of each program may have affected the extent of consolidation and the information collected. However, without clear and accurate data on quota holders and fishery-specific limits on quota holdings, it is difficult to determine whether any quota holdings in a particular fishery would be viewed as excessive, as prohibited by the MSA.
  - NMFS does not gather sufficient information or periodically analyze the data it does collect on surfclam/ocean quahog and Wreckfish quota holders to determine (1) who actually controls the use of the quota and (2) whether the holder is a foreign individual or entity. Furthermore, while each fishery is different, the regional councils have not defined the amount of quota that constitutes an excessive share in the surfclam/ocean quahog and wreckfish IFQ programs. Different program objectives and the political, economic, and social characteristics of each fishery make it difficult to define excessive share. However, without the information on who controls quota and defined limits on quota accumulation, NMFS cannot determine whether eligibility requirements are being met or raise questions as to whether any quota holdings are excessive.

2003

- In 2003, NMFS responded to several members of Congress about the GAO report. NMFS indicated that it would urge the Council to develop a plan amendment that limits the shares that an individual may hold.

2004

- A 2004 NMFS report (by Doug Christel) was written in response to the GAO report, and highlighted some of the additional information needs in these fisheries. “This report concludes that the degree of concentration in the ITQ program described by the GAO is due to the amount of information available. Current data collection by NOAA Fisheries is

[16] The U.S. Government Accountability Office (GAO; https://www.gao.gov/) is an independent, nonpartisan agency that works for Congress. Often called the "congressional watchdog," GAO examines how taxpayer dollars are spent and provides Congress and federal agencies with objective, reliable information to help the government save money and work more efficiently.

insufficient to assess ownership concentration to the extent necessary to monitor excessive shares within the ITQ program. This is because limited information is collected on corporate structure or related business entities." In addition, "This report recommends that further information be collected regarding allocation ownership within the ITQ program."

2004 - 2011

- During this time period, several FMAT [Fishery Management Action Team] meetings were held to discuss this issue. Periodically, the Council was updated on FMAT activities. But during this time period, no decisions were made to move this action forward to the Council.

2011

- Compass Lexecon Report concluded that, "The evidence we analyzed does not support a conclusion that market power is currently being exercised through withholding of quota in the SCOQ [surfclam and ocean quahog fisheries]." However, the report indicates that, "We do not analyze whether market power is exercised through the withholding of harvesting or processing, or through exclusionary conduct other than conduct involving quota ownership."

- The Compass Lexecon Report was reviewed by the Center for Independent Experts (CIE). [Summary of Findings by the Center for Independent Experts Regarding Setting Excessive Share Limits for ITQ Fisheries. Northeast Fisheries Science Center Reference Document 11-22]. The review noted that:

    - Measures of industrial concentration in the surfclam and ocean quahog fisheries (the Herfindahl-Hirschman index) suggests that marketing power may exist in these fisheries, particularly in its harvesting and processing sectors, but less so in quota holdings. These concentration measures are only indicative of the possibility of market power. They do not establish that it actually exists.
    - Implementation of the method proposed by the Technical Group requires at least the following data: quota ownership and control, processing volumes and capacity, size of the relevant market.
    - The method proposed by the Technical Group is based on the HHI, which means that evaluation of potential market power is consistent with what is done in other industries. However, in order to apply the method, more data are needed along with a better understanding of the industry.
    - The Technical Group should have paid more attention to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. This may be of greater concern than the monopoly problem.

2012

- The February 2012 Surfclam and Ocean Quahog Committee meeting discussed next steps for the then-numbered Amendment 15.
- At that meeting, GC Joel MacDonald advised that an information collection program could be implemented by NMFS without a Council FMP Amendment under authority granted in section 402(a) of the MSA.

- The Committee voted to split Amendment 15 into several parts: 1) move forward with cost recovery, essential fish habitat (EFH), and the ocean quahog biological reference point update in Amendment 15, 2) request that NMFS develop an information collection program, and 3) move development of an excessive shares cap to the next Amendment.

2013

- A "Data Collection Protocol" was developed for the Council to consider that would provide the data needed to understand ownership and control of the quota allocations in the surfclam and ocean quahog fisheries.
- The Council approved the "Data Collection Protocol."

2015

- The data collection protocol was implemented.

2016

- Ownership data collection began in 2016.

2017

- An FMAT was reformed to work on the Excessive Shares Amendment.

2018

- June 2018: Range of alternatives developed and presented to the Surfclam and Ocean Quahog Committee and Council.

2019

- March 2019: Surfclam and Ocean Quahog Advisory Panel and Committee provided feedback on the public hearing document
- April 2019: Council reviewed public hearing document and instructed FMAT to make some modifications to the documents and bring it back to the Committee for review.

5.0 MANAGEMENT ALTERNATIVES

This amendment considers a range of alternatives to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. This amendment also considers requirements for the periodic review of any implemented excessive cap level. Lastly, this action considers revisions to the process for specifying multi-year management measures, and future framework actions to make modifications to the excessive shares cap level.

In recognition of the diversity of potential solutions to these goals, a range of possible options for management measures ("alternatives") were developed for consideration. This approach complies with the statutory requirements of the NEPA to include a "range of alternatives" when evaluating the environmental impacts of federal actions. Section 5.1 describes the excessive shares alternatives, section 5.2 describes the periodic excessive shares review alternatives, section 5.3 describes the framework alternatives, and section 5.4 describes multi-year management measures alternatives. In addition, several alternatives were considered by the Council and rejected for further analysis. These "considered but rejected" alternatives are described in section 5.5. The complete analyses of the biological, economic, and social impacts of the alternatives is presented in section 7.0 of this document.

Comprehensive descriptions of the current regulations for surfclam and ocean quahog as detailed in the Code of Federal Regulations (CFR) are available here: http://www.greateratlantic.fisheries.noaa.gov/regs/fr.html.

5.1 Excessive Share Alternatives

The Council is required to define measurable criteria for what constitutes an excessive share in the Atlantic surfclam and ocean quahog ITQ privileges, to ensure the FMP is compliant with the MSA (see section 4.1 for additional information).

At this point it is unclear, if any of the alternatives under consideration will result in the need for any individual, entity, or corporation to divest. Therefore, there are no alternatives in this document that describes specific divestment mechanisms in the event that an individual or entity has accumulated quota share ownership in excess of the quota ownership levels presented in the alternatives described below. However, the Council, can consider divestment mechanisms if they find this necessary, or they can leave it to NMFS to address divestment options and mechanism.

The Compass Lexecon Report and associated Center for Independent Experts (CIE) review indicated a need for reliable information regarding ownership and control of quota in the surfclam and ocean quahog fisheries. Information showing detailed quota transfers and ownership relationships among final quota holders is important in assessing ownership and control (Mitchell et al., 2011, Walden 2011).

Participants in the surfclam and ocean quahog fisheries report that there are various types of transactions involving ITQs that commonly occur, including permanent quota share transfers, long-term bushel tag leases (e.g., five years), and transfers of cage tags (Mitchell et al. 2011). Furthermore, as indicated in the Compass Lexecon Report:

> *"The need for harvesters to hold quota at the time of harvesting raises further complications: some harvesters own or contract for their own quota, whereas in other cases processors obtain quota and transfer it without charge to their harvesters (which may be [either] affiliated or independent). When the processor owns quota or contracts for quota on behalf of a harvester, the transfer data will show the quota has been transferred to a harvester, but will not show whether the processor retains control of the quota in such transactions ("control" in this context means the power to decide whether the quota will be used to harvest clams). A complete understanding of the actual ownership and control of quota requires analysis of the contracts under which quota were transferred to the final owner or holder. An additional problem arises from the reporting of quota when used. The owner of quota is supposed to report to NMFS the specific tags (quota) that are used throughout the season. However, in many instances, it is not the recorded owner but another entity that reports the quota used. This is most likely a problem with related entities reporting the use of quota, which is another aspect of determining final quota ownership or control"* (Mitchell et al. 2011).

The Atlantic Surfclam and Ocean Quahog Information Collection Program was designed to collect information to assess ownership and control of the quota following transfers in the surfclam and ocean quahog fisheries. However, some industry members have reported that they would not disclose specific details on long-term ITQ leases,[17] as they see it as a confidential business practice. The ownership data collected for 2016 and 2017 includes very limited information on long-term leases, which suggests a lack of interest by industry members in reporting this information. Because of the lack of data to assess control from the context of "the power to decide whether the quota will be used to harvest clams," in this analysis combined "control" is used in the context of the possession of the cage tags, which is the power to decide if they will be used to harvest clams.[18]

5.1.1 Alternative 1: No Action/*Status Quo*

Under the no action alternative for excessive shares (alternative 1), the current management approach regarding excessive shares (i.e., share accumulation) would continue. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. The FMP would rely only on federal anti-trust provisions.

5.1.2 Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)

Under alternative 2, a single quota share cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags)[19] throughout the year.[20] Since the cap under this alternative is based on ownership-only, it does not

[17] Long-term contracts.
[18] In the scallop fishery, a similar concept is used to tabulate quota accumulation levels, that is, "if you touch it" (hold the tags), you have the ability to make decisions about whether those tags are fished or not.
[19] There would be no limit of how much annual allocation (cage tags) an individual or entity could use or transfer during the fishing year.
[20] All excessive share alternatives are applicable throughout the year.

account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

Note: The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to select and/or monitor any particular excessive shares cap level they wish to implement.[21]

5.1.2.1 Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 2.1, the single quota share caps would be based on the highest level of quota share held by an individual or entity reported in the ownership data[22] for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period,[23] as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. Note that the values in Tables 2 and 3 were rounded up to easy quantifying and monitoring process (e.g., 27.3 was rounded up to 28 and 27.7 was also rounded up to 28). These values were rounded up because rounding down could result in an existing entity being over the cap merely because of the rounding approach. The caps based on ownership data from 2016 to 2017 would be:

For surfclams –

- Option A: At the individual/business level, the cap would be 28% under all models
- Option B: At the family level, the cap would be 28% under all models
- Option C: At the corporate officer level, the cap would be 28% under all models

For ocean quahogs –

- Option A: At the individual/business level, the cap would be 22% under all models
- Option B: At the family level, the cap would be 22% under all models
- Option C: At the corporate officer level, the cap would be 22% under all models

A 28% cap for surfclams could potentially result in a minimum (if fully consolidated) of four large entities participating in the fisheries (i.e., four large entities at 28%, 28%, 28%, and 16%). A 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in the fisheries (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%).[24] The Council needs to

[21] See Definitions and Terminology at the end of Section 2.0 for more information on these choices. More detailed information on these choices is found in section 7.0.

[22] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

[23] On average, for the 2016-2017 period, 67% of the surfclam quota and 58% of the ocean quahog quota were landed (Table 4).

[24] The resulting number of minimum entities under excessive shares alternatives 2 through 4 assume that market demand equals supply. When this is not the case, the leasing market could be disrupted (because available quota is larger than product demand) which could result in smaller firms or entities not associated with a processor be driven out of business.

choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.2.2 Sub-Alternative 2.2: Quota share cap at 49%

Under sub-alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.2.3 Sub-Alternative 2.3: Quota share cap at 95%

Under sub-alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by some industry representatives. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly). A 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

Table 2. Surfclam maximum quota share ownership and combined level (quota share ownership plus leasing of annual allocation or cage tags) at the individual/business level, family level, and corporate officer level for various data tabulation models, 2016-2017.

Surfclam Values							
Owner Percentage Model		**Affiliation Levels**					
		Individual / Business Level		**Family Level** (individual / business level + family level)		**Corporate Officer Level** (individual / business level + family level + corporate officer level)	
		2016	**2017**	**2016**	**2017**	**2016**	**2017**
Net Actual Percentage	Owned	28	28	28	28	28	28
	Combined (Ownership + Leasing)	28	28	33	33	44	43
Cumulative 100% Model	Owned	28	28	28	28	28	28
	Combined (Ownership + Leasing)	48	46	49	47	49	47

Terminology

1) Net Actual Percentage Model–Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

2) Cumulative 100% Model-Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels: *Individual/Business Level*–smallest unit at the individual level or business (if an individual owner cannot be identified); ***Family Level***–includes any family associations that are not already accounted at the individual business level; and ***Corporate Officer Level***–includes association through corporate officer's that are not accounted for in the other levels.

Source: Analysis and Program Support Division, Greater Atlantic Regional Fisheries Office (GARFO).

Table 3. Ocean quahog maximum quota ownership and combined level (quota share ownership plus leasing of annual allocation or cage tags) at the individual/business level, family level, and corporate officer level for various data tabulation models, 2016-2017.

Ocean Quahog Values							
Owner Percentage Model		**Affiliation Levels**					
		Individual / Business Level		**Family Level** (individual / business level + family level)		**Corporate Officer Level** (individual / business level + family level + corporate officer level)	
		2016	**2017**	**2016**	**2017**	**2016**	**2017**
Net Actual Percentage	Owned	22	22	22	22	22	22
	Combined (Ownership + Leasing)	29	25	29	28	37	39
Cumulative 100% Model	Owned	22	22	22	22	22	22
	Combined (Ownership + Leasing)	38	41	38	41	38	41

Terminology

1) Net Actual Percentage Model–Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

2) Cumulative 100% Model-Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels: *Individual/Business Level*–smallest unit at the individual level or business (if an individual owner cannot be identified); ***Family Level***–includes any family associations that are not already accounted at the individual business level; and ***Corporate Officer Level***–includes association through corporate officer's that are not accounted for in the other levels.

Source: Analysis and Program Support Division, Greater Atlantic Regional Fisheries Office (GARFO).

5.1.3 Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)

Under alternative 3, a cap based on combined values for quota share ownership plus leasing of annual allocation (cage tags) would be established separately for surfclams and ocean quahogs. Since the cap under this alternative is based on ownership plus leasing of annual allocation (cage tags), it accounts for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing)[25] that are prevalent in the fisheries when setting the cap limit.

5.1.3.1 Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 3.1, the combined caps would be based on the highest level of quota share ownership plus leasing of annual allocation (cage tags) by an individual or entity reported in the ownership data[26] for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period, as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The combined caps under this alternative would depend on the determination of combined levels (quota share ownership plus cage tag leasing) under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The combined caps based on ownership data from 2016 to 2017 would be:

For surfclams -

- Option A: At the individual/business level, the cap would be:
  - 28% under the combined net actual percentage model
  - 48% under the combined cumulative 100% model
- Option B: At the family level, the cap would be:
  - 33% under the combined net actual percentage model
  - 49% under the combined cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 44% under the combined net actual percentage model
  - 49% under the combined cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
  - 29% under the combined net actual percentage model
  - 41% under the combined cumulative 100% model
- Option B: At the family level, the cap would be:
  - 29% under the combined net actual percentage model

[25] The Compass Lexecon Report and CIE review indicated a need for reliable information regarding ownership and control of quota in the surfclam and ocean quahog fisheries. Information showing detailed quota transfers and ownership relationships among final quota holders is important in assessing ownership and control (Mitchell et al., 2011, Walden 2011).

[26] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

    - 41% under the combined cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
    - 39% under the combined net actual percentage model
    - 41% under the combined cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to select and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.3.2 Sub-Alternative 3.2: Combined cap at 40%

Under sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures [ensure] that there would be at least three processors operating at reasonable output levels" (Walden 2011). A 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.3.3 Sub-Alternative 3.3: Combined cap at 49%

Under sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.4 Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)

Under alternative 4, a two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex business practices that occur in these fisheries**.**

5.1.4.1 Sub-Alternative 4.1: Two-part cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage tags) would be based on the highest levels reported in the ownership data[27] for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period, as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The two-part cap based on ownership data from 2016 to 2017 would be:

For surfclams -

- Option A: At the individual/business level, the cap would be:
  - 28% ownership / 28% combined under the net actual percentage model
  - 28% ownership / 48% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 28% ownership / 33% combined under the net actual percentage model
  - 28% ownership / 49% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 28% ownership / 44% combined under the net actual percentage model
  - 28% ownership / 49% combined the cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
  - 22% ownership / 29% combined under the net actual percentage model
  - 22% ownership / 41% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 22% ownership / 29% combined under the net actual percentage model
  - 22% ownership / 41% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 22% ownership / 39% combined under the net actual percentage model
  - 22% ownership / 41% combined the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual

[27] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

percentage model) to select and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.4.2 Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017 plus 15% added to the maximum levels to allow for additional consolidation

Under sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data[28] for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for the 2016-2017 period to allow for additional consolidation (Tables 2 and 3). The 15% value to allow for additional consolidation was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. As with sub-alternative 4.1, the two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The two-part cap based on ownership data from 2016 to 2017 would be:

(*Note: these values were calculated by adding 15% for anticipated growth to the values presented under sub-alternative 4.1*)

For surfclams -

- Option A: At the individual/business level, the cap would be:
    - 43% ownership / 43% combined under the net actual percentage model
    - 43% ownership / 63% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
    - 43% ownership / 48% combined under the net actual percentage model
    - 43% ownership / 64% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
    - 43% ownership / 59% combined under the net actual percentage model
    - 43% ownership / 64% combined under the cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
    - 37% ownership / 44% combined under the net actual percentage model
    - 37% ownership / 56% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
    - 37% ownership / 44% combined under the net actual percentage model
    - 37% ownership / 56% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
    - 37% ownership / 54% combined under the net actual percentage model

[28] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

- 37% ownership / 56% combined under the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to select and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.4.3 Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%

Sub-Alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. This alternative could potentially result in a minimum of four entities participating in the fisheries (i.e., four large entities at 30%, 30%, 30%, and 10% ownership quota share cap). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.5 Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Under alternative 5, the cap would be 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags), plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

The 40% cap under this alternative is based on recommendations found in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). “In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails.” And “An excessive-share cap of 40% assures [ensure] that there would be at least three processors operating at reasonable output levels” (Walden 2011).

This alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). The FMAT noted that the “two-part system” (i.e., cap on ownership plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with

the anticipated market demand. Alternatively, an advantage of Quota A and Quota B shares is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. Lastly, this alternative could potentially result in a minimum of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

Box 5.1.5 below shows a hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work the first year of implementation (year 4) for surfclams and ocean quahogs. In this example, the same overall quota levels that have been in place for surfclams and ocean quahogs for the 15 years are used in year 4. In addition, under this example a 3-year average (for years 1-3) is used to derive Quota A shares for year 4. The difference between the overall ACT level and Quota A shares for year 4 is used to determine the Quota B shares level for that year.

As it can be seen in Box 5.1.5, the overall quota allocated to each fishery in bushels or number of issued cage tags do not change in year 4 when compared to prior years. However, while in years 1-3, the overall number of cage tags issued to each fishery (i.e., corresponding to the quota for each fishery; 106,250 cage tags for surfclams and 166,656 cage tags for ocean quahogs) would be released at the onset of the fishing year, under this alternative, only the Quota A shares and associated number of cage tags for that quota would be released at the onset of the fishing year and Quota B shares would be released when Quota A shares are exhausted.[29] As an example, for surfclams, Quota A shares, 2.352 million bushels or 73,500 cage tags would be released at the beginning on the fishing year 4, when this quota and associated number of cage tags have been used, then Quota B shares of 1.048 million bushels or 32,750 cage tags would be released that same fishing year (year 4). While under this alternative, the release of the quota (and associated cage tags) is split into two components (Quota A shares and Quota B shares), the overall quota level and number of cage tags available during the entire fishing year 4 is identical to that from prior fishing years (years 1-3).

[29] If this alternative is implemented, NOAA fisheries will have to determine how to release Quota B shares to allocation holders at the time the B shares are released.

Box 5.1.5. Hypothetical derivation of Quota A shares and Quota B shares (and cage tags) for surfclams and ocean quahogs under alternatives 5 and 6.				
Year	**Quota Million bushels**	**Landings Million bushels**	**Quota A shares Million bushels**	**Quota B shares Million bushels**
Atlantic surfclams				
1	3.400 (106,250 cage tags)	2.364 (73,875 cage tags)	NA	NA
2	3.400 (106,250 cage tags)	2.354 (73,563 cage tags)	NA	NA
3	3.400 (106,250 cage tags)	2.339 (73,094 cage tags)	NA	NA
4	3.400 (106,250 cage tags)	NA	2.352 (73,500 cage tags)	1.048 (32,750 cage tags)
Ocean quahogs				
1	5.333 (166,656 cage tags)	3.196 (99,875 cage tags)	NA	NA
2	5.333 (166,656 cage tags)	3.007 (93,968 cage tags)	NA	NA
3	5.333 (166,656 cage tags)	3.075 (96,094 cage tags)	NA	NA
4	5.333 (166,656 cage tags)	NA	3.093 (96,656 cage tags)	2.240 (70,000 cage tags)

NA = not applicable or not available.

5.1.6 Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Under alternative 6, the cap would be 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (annual catch target) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing combined.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

The two-tier quota under this alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

The FMAT noted that the "two-part system" (i.e., cap on ownership plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of Quota A and Quota B shares is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway

through the fishing year. Lastly, this alternative could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

For a hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work for surfclams and ocean quahogs see section 5.1.5 above.

5.2 Excessive Shares Review Alternatives

5.2.1 Alternative 1: No Action/*Status Quo*

Under the no action alternative for excessive shares review (alternative 1), there would not be a requirement for periodic review of any implemented the excessive shares measures.

5.2.2 Alternative 2: Require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed

Allowing for a periodic review of any excessive shares measures that the Council adopts would permit the Council to revise these measures if conditions in the fisheries change over time. Conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions will likely change in the future. Therefore, an excessive shares measure or specific cap level established at an appropriate level could over time become inefficiently high or low.

In order to facilitate any necessary modifications to the cap levels, the Council could recommend adding modification of the cap levels to the list of management actions that could be implemented via the framework adjustment process (alternative 5.3). However, if major changes to the overall excessive shares measures are needed, an amendment process will likely be needed.

This alternative would provide for an enforceable provision for regular review and evaluation of the performance of the cap for the surfclam and ocean quahog ITQ fisheries. However, under this alternative, does not preclude the Council could review any implemented excessive shares measures before the official review time period (i.e., 10 year review period).

5.3 Framework Adjustment Process Alternatives

A framework is an action that adjusts measures within the scope and criteria established by the FMP within a range as defined and analyzed in the FMP. The Amendment 12 to the Surfclam and Ocean Quahog FMP implemented a framework adjustment process that allows management measures to be added or modified through a streamline public process (MAFMC 1998b). The range of frameworkable management measure were subsequently revised in Amendment 16 to the FMP (MAFMC 2011). The list of possible management measures to be addressed via the framework adjustment process included in the FMP include (50 CFR §648.79):

- Adjustments within existing ABC control rule levels
- Adjustments to the existing MAFMC risk policy
- Introduction of new AMs, including sub-ACTs
- Description and identification of EFH (and fishing gear management measures that impact EFH)
- Habitat areas of particular concern
- Set-aside quota for scientific research
- VMS
- Suspension or adjustment of the surfclam minimum size limit

Frameworks typically take a minimum of 1-year to be completed; with a minimum of two framework meetings and approximately 4-6 months for rulemaking and implementation. It may be useful to add the cap review measure as frameworkable under the FMP in order to address potential future changes in the ITQ program in a timely fashion.

5.3.1 Alternative 1: No Action/*Status Quo*

Under the no action alternative for framework adjustment process (alternative 1), the list of management measures that have been identified in the FMP that could be implemented or adjusted via the framework adjustment process would remain unmodified.

5.3.2 Alternative 2: Add modification of the excessive share cap levels to the list of measures to be adjusted via framework

This alternative would allow for the expansion of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive share cap level.

This frameworkable item would provide means to make modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to select cap or model or affiliation level used to select cap), only if the modification would not result in an entity having to divest. The inclusion of this measure to the list of measures that can be addressed via the framework adjustment process would provide flexibility to managers to make changes to the caps in a timely manner. The impacts of any future framework action related to the excessive cap level would be analyzed through a separate action, which would include public comment opportunities and documentation of compliance with all applicable laws.

5.4 Multi-Year Management Measures Alternatives

Surfclam and ocean quahog regulations allow multi-year annual quota specification to be set for up to 3 years at a time (CFR §648.71 and 648.72). Therefore, current regulations allow, but do not obligate the Council to specify commercial quotas and other management measure for up to 3 years. Multi-year regulations have been implemented for all fisheries managed by the MAFMC to relieve administrative demands on the Council and NMFS imposed by the annual specification

process. Additionally, longer term specifications should provide greater regulatory consistency and predictability to the fishing sectors.

5.4.1 Alternative 1: No Action/*Status Quo*

Under this no action alternative for multi-year management measures (alternative 1), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years.

Regulations for the surfclam and ocean quahog specifications setting process at 50 CFR §648.72, stipulate that annual catch quotas can be established for up to a 3-year period. Specifications of the annual quotas are prepared in the final year of the quota period, unless there is a need for an interim quota modification. It is also stipulated in the regulations that on an annual basis, the MAFMC staff produce and provide to the Council an Atlantic surfclam and ocean quahog annual quota recommendation paper based on the acceptable biological catch (ABC) recommendation of the Scientific and Statistical Committee (SSC), the latest available stock assessment report prepared by NMFS, data reported by harvesters and processors, and other relevant data. Based on that report, and at least once prior to August 15 of the year in which a multi-year annual quota specification expires, the MAFMC, following an opportunity for public comment, will recommend to the Regional Administrator annual quotas and other management measures.

5.4.2 Alternative 2: Allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule

Under alternative 2, specifications could be set for a period up to the maximum number of years consistent with the NRCC-approved stock assessment schedule.[30] This alternative would provide additional flexibility as specifications could be set to cover the time period until a new surfclam and/or ocean quahog stock assessment is produced. New specifications of the annual quotas would be prepared in the final year of the quota period, unless there is a need for interim quota modifications. Council staff would coordinate with Northeast Fisheries Science Center (NEFSC) staff, during the first quarter of each year during the multi-year specifications period to assess whether there is any relevant information regarding these fisheries that need to be addressed and/or to produce interim quota modifications. The results would be provided to the Council in a memorandum. In the year in which a multi-year annual quota specifications expire, Council staff would produce a fishery information document and specification recommendation memorandum to provide to the SSC and the Council.

Lastly, under the current regulations at §648.72, there is some terminology that is no longer used when deriving catch and landings limits for these species (e.g., DAH or Domestic Annual Harvest; DAP or Domestic Annual Processing) that would be removed from the regulations under this alternative. In addition, the requirements for the contents of annual quota reports are not consistent with the current process for setting catch and landings limits based off the stock assessment (i.e., outdated terminology), therefore that language would be revised to reflect current practices for development of fishery information documents and recommendations memorandum.

[30] For example, under the current schedule, new survey information will be available every 4 years for surfclams and every 6 years for ocean quahogs after which a stock assessment may be conducted.

None of the other existing catch and landings limits regulations, accountability measures, reporting requirements or ITQ system management procedures will change under alternative 2.

5.5 Alternatives Considered but Rejected from Further Analysis

Since the initiation of this amendment, the Council considered a range of different alternatives to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges corresponding to the purpose and need statements described in section 4.1. To address these need statements, the Council considered various approaches. Concepts or options that were discussed but rejected from further consideration, are described below for joint ventures (section 5.5.1) and other excessive shares cap levels (5.5.2 and 5.5.3).

5.5.1 Allow for Joint Ventures in these fisheries

The surfclam and ocean quahog harvest levels have been well below the quota levels established for those fisheries for many years (see Table 4 in section 6.0). This alternative could allow for additional product to be sold and competition increased. For example, the FMAT initially discussed the possibility of joint ventures with foreign partners in which clams harvested by the United States fishermen could be delivered to foreign processing vessels in the EEZ. This alternative was considered but rejected for further analysis as it was deemed unpractical for these fisheries (e.g., perishable nature of the product; ITQ system that requires cages to be landed with tags, etc.). In addition, some industry representatives indicated that they would not like to sell their clams to international companies competing with their interests.

5.5.2 Set the cap at a specific level. But allow for opportunity for further consolidation upon review by NMFS

Conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions will likely change in the future. Therefore, an excessive shares measure or specific cap level established at an appropriate level could over time become inefficiently high or low. This alternative would allow any entity or firm to request NMFS to review information (e.g. excessive shares cap level, market conditions, other relevant information) to assess if further consolidation (beyond any Council implemented excessive cap share level) was warranted for that entity or firm. This alternative was considered but rejected for further consideration as it would require a large amount of data to be provided by the industry; including confidential data on production costs, profitability, production capacity, etc. This information is not presently available to NMFS. In addition, this alternative would also require extensive review and analysis by the NEFSC Social Science Branch, making this approach unpractical.

5.5.3 Use the seven steps on excessive shares proposal developed presented in the Compass Lexecon Report

The seven steps on excessive shares proposal presented in the Compass Lexecon Report includes the use of the Herfindahl-Hirschman Index (HHI), assessment of the breadth of the market, the scope and quantity of substitute products, the level of excess capacity, the degree of product heterogeneity, the relative bargaining power of buyers and sellers, the ability to price discriminate, ease of entry, and efficiencies -or economies of scale, the size of the fringe, and the sources of supply to processors (Mitchell et al. 2011, Walden 2011). However, the FMAT indicated that this methodology requires a large amount of quantitative information that is not readily available and would also require frequent revision of caps due to changes in market dynamics, making this approach unpractical.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The affected environment consists of those physical, biological, and human components of the environment expected to experience impacts if any of the actions considered in this document were to be implemented. This document focuses on four aspects of the affected environment, which are defined as valued ecosystem components (VECs).

The VECs include:

- Managed species (i.e. Atlantic surfclam and ocean quahog) and non-target species
- Physical habitat
- Protected species
- Human communities

The following sections describe the recent condition of the VECs.

6.1 Managed Resources and Non-Target Species

6.1.1 Description of the Fisheries

The management unit is all Atlantic surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) in the Atlantic EEZ. The commercial fisheries for surfclam and ocean quahog are fully described in Amendment 13 to the FMP (MAFMC 2003). Clam dredges (a bottom tending mobile gear) are utilized in the commercial fisheries for both species. An overview of commercial landings for both species is provided in Table 4 (in section 6.1.1.1.2 below).

Additional information on these fisheries can be found in Council meeting materials available at: http://www.mafmc.org.

6.1.1.1 Basic Biology

6.1.1.1.1 Atlantic Surfclam

Information on Atlantic surfclam biology can be found in the document titled, "Essential Fish Habitat Source Document: Surfclam, *Spisula solidissima*, Life History and Habitat Requirements" (Cargnelli et al. 1999a). An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh. Additional information on this species is available at the following website: http://www.fishwatch.gov. A summary of the basic biology is provided below.

Atlantic surfclams are distributed along the western North Atlantic Ocean from the southern Gulf of St. Lawrence to Cape Hatteras. Surfclams occur in both the state territorial waters (≤ 3 miles from shore) and within the EEZ (3-200 miles from shore). Commercial concentrations are found primarily off New Jersey, the Delmarva Peninsula, and on Georges Bank. In the Mid-Atlantic region, surfclams are found from the intertidal zone to a depth of about 60 meters (197 ft), but densities are low at depths greater than 40 meters (131 ft).

The maximum size of surfclams is about 22.5 cm (8.9 inches) shell length, but surfclams larger than 20 cm (7.9 inches) are rare. The maximum age exceeds 30 years and surfclams of 15-20 years of age are common in many areas. Surfclams are capable of reproduction in their first year of life, although full maturity may not be reached until the second year. Eggs and sperm are shed directly into the water column. Recruitment to the bottom occurs after a planktonic larval period of about three weeks.

Atlantic surfclams are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of surfclams include certain species of crabs, sea stars, snails, and other crustaceans, as well as fish predators such cod and haddock.

6.1.1.1.2 Ocean Quahog

Information on ocean quahog biology can be found in the document titled, "Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Requirements" (Cargnelli et al. 1999b). An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh. Additional information on this species is available at the following website: http://www.fishwatch.gov. A summary of the basic biology is provided below.

The ocean quahog is a bivalve mollusk distributed in temperate and boreal waters on both sides of the North Atlantic Ocean. In the Northeast Atlantic, quahogs occur from Newfoundland to Cape Hatteras from depths of about 8 to 400 meters. Ocean quahogs further north occur closer to shore. The U.S. stock resource is almost entirely within the EEZ (3-200 miles from shore), outside of state waters, and at depths between 20 and 80 meters. However, in the northern range, ocean quahogs inhabit waters closer to shore, such that the state of Maine has a small commercial fishery which includes beds within the state's territorial sea (< 3 miles). Ocean quahogs burrow in a variety of substrates and are often associated with fine sand.

Ocean quahogs are one of the longest-living, slowest growing marine bivalves in the world. Under normal circumstances, they live to more than 100 years old. Ocean quahogs have been aged well in excess of 200 years. Growth tends to slow after age 20, which corresponds to the size currently harvested by the industry (approximately 3 inches). Size and age at sexual maturity are variable and poorly known. Studies in Icelandic waters indicate that 10, 50, and 90 percent of female ocean quahogs were sexually mature at 40, 64 and 88 mm (1.5, 2.5 and 3.5 inches) shell length or approximately 2, 19 and 61 years of age. Spawning occurs over a protracted interval from summer through autumn. Free-floating larvae may drift far from their spawning location because they develop slowly and are planktonic for more than 30 days before settling. Major recruitment events appear to be separated by periods of decades.

Based on their growth, longevity and recruitment patterns, ocean quahogs are relatively unproductive and able to support only low levels of fishing. The current resource consists of individuals that accumulated over many decades.

Ocean quahogs are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of ocean quahogs include certain

species of crabs, sea stars, and other crustaceans, as well as fish species such as sculpins, ocean pout, cod, and haddock.

Table 4. Federal Surfclam and Ocean Quahog Quotas and Landings: 1998 - 2018.

	Surfclam ('000 bu)			Ocean Quahog ('000 bu)		
Year	**Landings[a]**	**Quota**	**% Harvested**	**Landings[b]**	**Quota**	**% Harvested**
1998	2,365	2,565	92%	3,946	4,000	99%
1999	2,539	2,565	99%	3,832	4,500	85%
2000	2,566	2,565	100%	3,246	4,500	72%
2001	2,855	2,850	100%	3,763	4,500	84%
2002	3,113	3,135	99%	3,957	4,500	88%
2003	3,241	3,250	100%	4,148	4,500	92%
2004	3,138	3,400	92%	3,892	5,000	78%
2005	2,744	3,400	81%	3,006	5,333	56%
2006	3,057	3,400	90%	3,147	5,333	59%
2007	3,231	3,400	95%	3,431	5,333	64%
2008	2,919	3,400	86%	3,467	5,333	65%
2009	2,602	3,400	77%	3,463	5,333	65%
2010	2,332	3,400	69%	3,591	5,333	67%
2011	2,443	3,400	72%	3,160	5,333	59%
2012	2,341	3,400	69%	3,497	5,333	66%
2013	2,406	3,400	71%	3,245	5,333	61%
2014	2,364	3,400	70%	3,196	5,333	60%
2015	2,354	3,400	69%	3,007	5,333	56%
2016	2,339	3,400	69%	3,075	5,333	57%
2017	2,186[c]	3,400	64%[c]	3,149[c]	5,333	59%[c]
2018	NA	3,400	NA	NA	5,333	NA
2019	NA	3,400	NA	NA	5,333	NA
2020	NA	3,400	NA	NA	5,333	NA

[a] 1 surfclam bushel is approximately 17 lb. [b] 1 ocean quahog bushel is approximately 10 lb. [c] Preliminary, incomplete 2017 data. NA = Not yet available. Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

6.1.2 Description of the Stock (Including Status, Stock Characteristics, and Ecological Relationships)

Reports on stock status, including SAW/SARC (Stock Assessment Workshop/Stock Assessment Review Committee) reports, and assessment update reports are available online at the NOAA NEFSC website: http://www.nefsc.noaa.gov/. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

6.1.2.1 Atlantic Surfclam

The Atlantic surfclam stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 61 (SAW 61; NEFSC 2017a). A statistical catch at age and length model called Stock Synthesis was used. Reports on "Stock Status," including assessment and reference point updates, SAW reports, and SARC panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

New reference points were developed for SAW 61 which are more justified scientifically. The new biomass reference points and measures of stock biomass are ratios rather than absolute biomass in weight. This approach allows for conclusions about the status of the surfclam stock despite substantial uncertainty in the actual biomass of the stock (NEFSC 2017a).

The Atlantic surfclam stock was not overfished in 2015 (Figure 1; NEFSC 2017a). Based on recommended reference points for the whole stock which use spawning stock biomass (SSB), estimated $SSB_{2015}/SSB_{Threshold} = 2.54$ (probability overfished < 0.01). For surfclam, SSB is almost equal to total biomass. Trends expressed as the ratio $SSB/SSB_{Threshold}$ are more reliably estimated than SSB. For the whole stock, relative SSB ($SSB/SSB_{Threshold}$) declined during the last fifteen years but is still above the target.

Overfishing did not occur in 2015 (Figure 2; NEFSC 2017a). Based on new recommended reference points, estimated $F_{2015}/F_{Threshold} = 0.295$ (probability overfished < 0.01). Trends expressed as the ratio $F/F_{Threshold}$ are more reliably estimated than absolute fishing mortality rates. For the whole stock the trend in relative F ($F/F_{Threshold}$) generally increased during the last fifteen years (despite recent declines in the south) but is still below the threshold.

Trends expressed as the ratio of recruitment (R) and mean recruitment in an unfished stock (R_0) are more reliably estimated than absolute recruitment (Figure 3; NEFSC 2016). The trend in relative recruitment is measured using the ratio R/R_0. Recruitment generally increased over the last decade, and in 2015 R/R_0 was 0.57 in the north, 0.97 in the south, and 0.75 for the stock as a whole, indicating recruitment in 2015 was about 57%, 97% and 75% of the maximum long-term average in the three regions. These recruitment patterns are probably normal in a surfclam stock at relatively high biomass and with low fishing mortality. Recruitment for the whole stock is measured as the geometric mean of R/R_0 in the northern and southern areas and is more uncertain than estimates for either area.

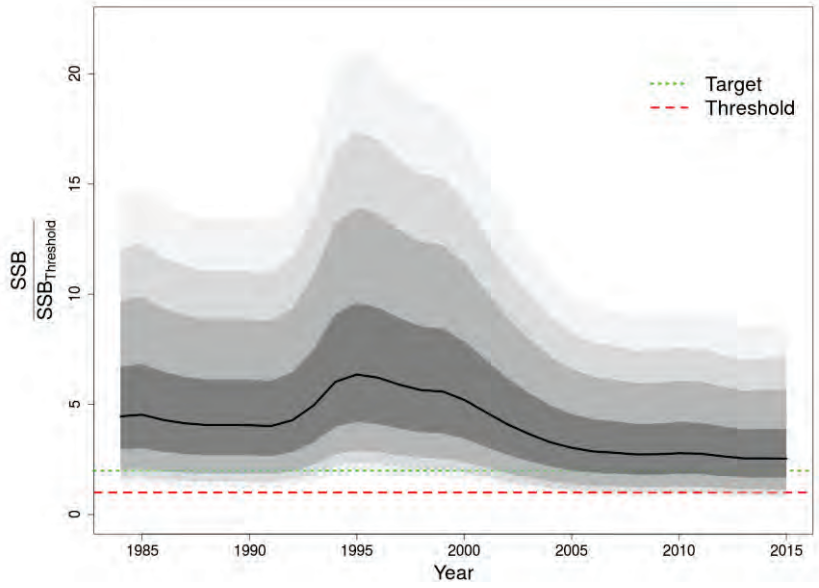


Figure 1. Trends in relative spawning stock biomass (SSB/SSB$_{Threshold}$) for the whole Atlantic surfclam stock during 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The green short-dash line at SSB/SSB$_{Threshold}$ = 2 is the management target. The red long-dash line at SSB/SSB$_{Threshold}$ = 1 is the level that defines an overfished stock* (NEFSC 2017a).

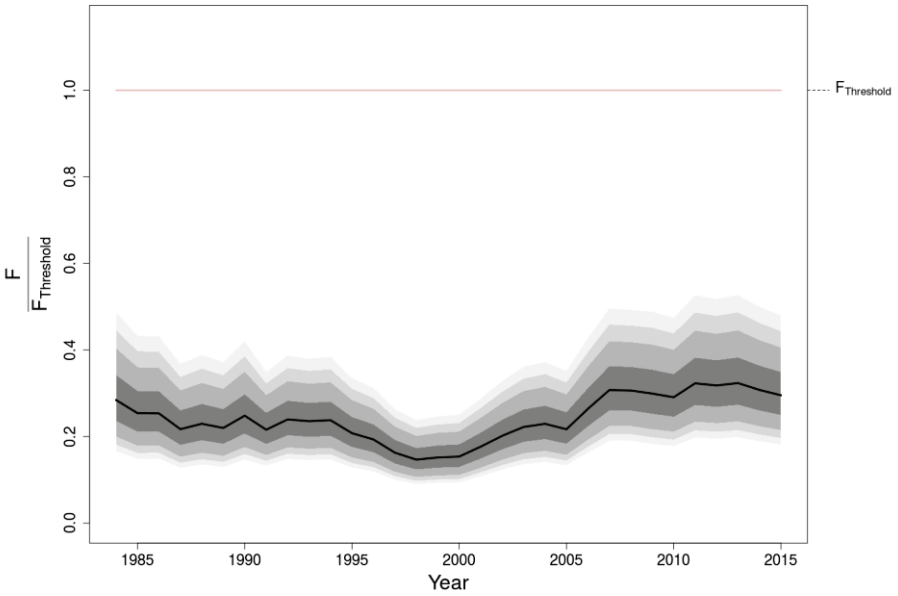


Figure 2. Trends in relative fishing mortality F/F$_{Threshold}$ for the whole Atlantic surfclam stock 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The solid line at F/F$_{Threshold}$ = 1 is the new fishing mortality threshold reference point* (NEFSC 2017a).

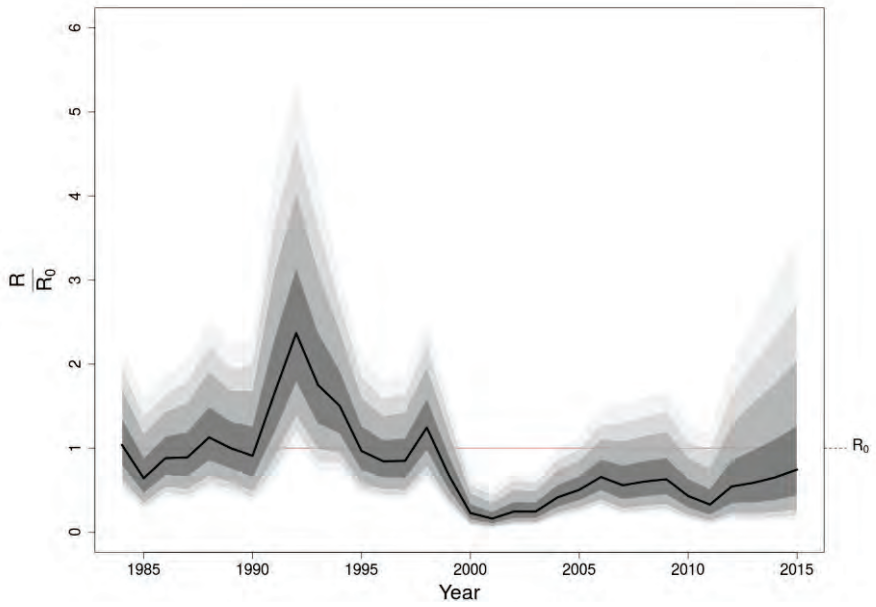


Figure 3. Trends in relative recruitment (R/R_0 for age zero recruits) for the whole Atlantic surfclam stock during 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The horizontal line is mean recruitment in an unfished stock* (NEFSC 2017a).

6.1.2.2 Ocean Quahog

The ocean quahog stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 63 (SAW 63; NEFSC 2017b). A statistical catch at length model called Stock Synthesis was used. Reports on "Stock Status," including assessment and reference point updates, SAW reports, and SARC panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

The ocean quahog was not overfished in 2016 (Figure 4; NEFSC 2017b). Based on SAW 63 reference points from the 2017 assessment for the stock, estimated $SSB_{2016}/SSB_{Threshold} = 2.04$ (probability overfished < 0.01), where SSB is spawning stock biomass.

Overfishing did not occur in 2016 (Figure 5; NEFSC 2017b). Based on SAW 63 reference points, estimated $F_{2016/FThreshold} = 0.246$ (probability overfishing < 0.01), where F is fishing mortality rate.

There is little information about annual recruitment variability for ocean quahog. Model estimated recruitment has been stable and near unfished recruitment levels since 2000 (NEFSC 2017b).

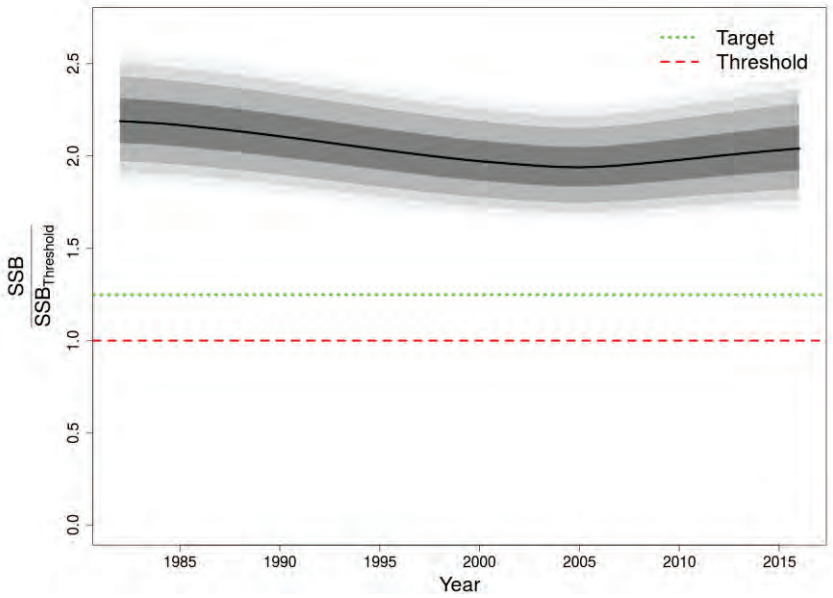


Figure 4. Trends in relative spawning stock biomass (SSB/SSB$_{Threshold}$) for the whole ocean quahog stock during 1982-2016. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The green short-dash line at SSB/SSB$_{Threshold}$ = 1.25 is the management target. The red long-dash line at SSB/SSB$_{Threshold}$ = 1 is the level that defines an overfished stock* (NEFSC 2017).

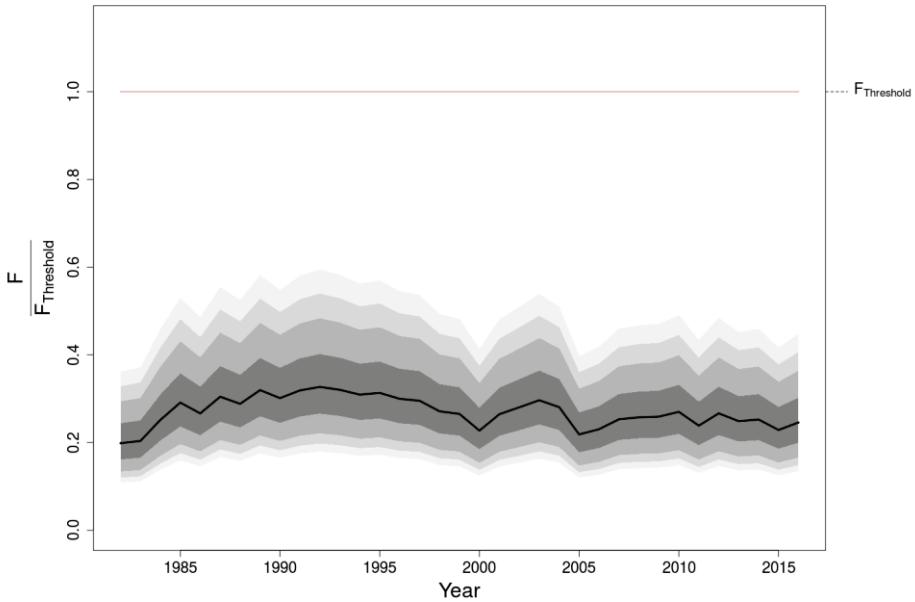


Figure 5. Trends in relative fishing mortality F/F$_{Threshold}$ for ocean quahog stock 1982-2016. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The solid line at F/F$_{Threshold}$ = 1 is the new fishing mortality threshold reference point* (NEFSC 2017).

6.1.3 Non-Target Species

Non-target species are those species caught incidentally while targeting other species. Non-target species may be retained or discarded.

The estimated bycatch of non-targeted species by the surfclam and ocean quahog fisheries based on observer data from 2016 was provided by Toni Chute (Personal Communication, November 15, 2017).

There were 15 observed ocean quahog trips (out of a total of 957 trips, so 1.6% of trips were observed) and 28 observed surfclam trips (out of a total of 2,414, so 1.2% percent of trips were observed) in 2016. All species or species categories caught in the dredge, brought on board, and noted and weighed by observers during normal dredging operations are listed in Tables 5 and 6. For the 2016 observed hauls, the protocol for the observers was to stand along the conveyor belt after the catch had passed over the shaker table and move non-target species from the belt into baskets for weight. Bycatch types that were not informative (such as "invertebrate, unclassified") or inanimate (shell, debris) are not shown. The dominant bycatch species include sea scallops, skates, monkfish, stargazers, crabs, and snails. The surfclam fishery also discards ocean quahogs, and the ocean quahog fishery discards surfclams.

Table 7 shows estimates of total fisheries bycatch/discard in 2016 based on the observer data. The weight of each species caught during observed hauls (including the target species) was totaled, then the amount of each non-targeted species was divided by the amount of target species caught, converted to meat weights, to determine a discard/kept (d/k) ratio for that species. Non-targeted species that were kept in small amounts (usually scallops, monkfish, and flatfish) were treated as discard for the purpose of estimating total bycatch. The d/k ratio for each bycatch species was then multiplied by the total landings of the target species in 2016 in meat weights to estimate bycatch. For example, if the catch from observed surfclam trips totaled 100 tons of surfclam meats and 1 ton of scallops, the calculated d/k ratio for scallops based on observer data would be 0.01 or 1/100. If the surfclam fishery for that year landed 1,000 tons of surfclam meats, then 1,000 tons multiplied by the d/k ratio of 0.01 for scallops estimates that about 10 tons of scallops were caught and discarded by the surfclam fishery. Only the amount of bycatch was estimated - no assumptions were made about discard or incidental mortality. Bycatch species that were estimated to be less than 100 pounds in total over the year are not shown.

It is important to note that specific bycatch types were highly variable. A few hauls where a significant weight of a certain bycatch species was caught influence the annual estimates. Using mean catch per trip of all the bycatch species overestimates total bycatch by assuming all the species are caught in every trip. Tables 8 and 9 list the amounts and types of bycatch reported from individual trips to show variability between trips.

Lastly, there were small quantities of ocean quahogs caught in observed surfclam trips and vice versa. In all, ocean quahogs contributed with 0.65% of the total catch on observed surfclam trips and surfclams contributed with 0.48% of the total catch on observed ocean quahog trips.

Table 5. Total weights of species caught during all observed ocean quahog hauls in 2016, and their percentage of both total catch and un-targeted catch.

Ocean quahog fishery			
Number of observed trips	15		
Number of observed hauls	370		
Species caught	**Weight (lbs)**	**% of total catch**	**% of un-targeted catch**
Ocean quahog (round weight)	2,629,292	98.53	
Surfclam (round weight)	12,827	0.48	32.77
Sea scallop	11,612	0.44	29.67
Little skate	6,816	0.26	17.42
Monkfish	3,121	0.12	7.98
Mussel, unclassified	829	0.03	2.12
Winter skate	741	0.03	1.89
Spiny dogfish	656	0.02	1.68
Snail, unclassified	617	0.02	1.58
Striped sea robin	228	0.01	0.58
Summer flounder	189	0.01	0.48
Horseshoe crab	176	0.01	0.45
Cancer crab, unclassified	171	0.01	0.44
Rock crab	167	0.01	0.43
Jonah crab	163	0.01	0.42
Worm, unclassified	161	0.01	0.41
Skate, unclassified	131	0.005	0.34
Crab, unclassified	110	0.004	0.28
Whelk, true, unclassified	79	0.003	0.20
Northern stargazer	45	0.002	0.11
Sponge, unclassified	36	0.001	0.09
Barndoor skate	35	0.001	0.09
Clearnose skate	30	0.001	0.08
Northern sea robin	30	0.001	0.08
Sea star, unclassified	28	0.001	0.07
Smooth dogfish	22	0.001	0.06
American lobster	20	0.001	0.05
Black sea bass	20	0.001	0.05
Skate, little or winter	19	0.001	0.05
Fourspot flounder	12	0.0005	0.03
Windowpane flounder	8	0.0003	0.02
Moon snail	6	0.0002	0.02
Ocean pout	6	0.0002	0.01
Red hake	5	0.0002	0.01
American plaice	4	0.0001	0.01
Bluefish	3	0.0001	0.01
Whelk, unclassified	3	0.0001	0.01
Spotted hake	2	0.0001	0.01
Hermit crab, unclassified	2	0.0001	0.01
Silver hake	2	0.0001	0.004
Yellowtail flounder	1	0.00004	0.003
Winter flounder	1	0.00003	0.002
Scup	1	0.00003	0.002
Chain dogfish	1	0.00003	0.002
Sea raven	1	0.00002	0.001
Stony coral, unclassified	0.4	0.00001	0.001
Eel, unclassified	0.1	0.000004	0.0003
Sea cucumber, unclassified	0.1	0.000004	0.0003

Table 6. Total weights of species caught during all observed surfclam hauls in 2016, and their percentage of both total catch and un-targeted catch.

Surfclam fishery			
Number of observed trips	28		
Number of observed hauls	815		
Species caught	**Weight (lbs)**	**% of total catch**	**% of un-targeted catch**
Surfclam (round weight)	1,845,643	97.50	
Moon snail, unclassified	12,527	0.66	26.51
Ocean quahog (round weight)	12,267	0.65	25.96
Mussel, unclassified	12,007	0.63	25.41
Winter skate	2,737	0.14	5.79
Little skate	2,393	0.13	5.06
Horseshoe crab	1,307	0.07	2.77
Northern stargazer	1,131	0.06	2.39
Rock crab	651	0.03	1.38
Hermit crab, unclassified	618	0.03	1.31
Northern sea robin	351	0.02	0.74
Monkfish	323	0.02	0.68
Sea scallop	294	0.02	0.62
Spiny dogfish	168	0.01	0.36
Snail, unclassified	142	0.01	0.30
Elasmobranch eggs, unclassified	71	0.004	0.15
Summer flounder	60	0.003	0.13
Winter flounder	32	0.002	0.07
Jonah crab	27	0.001	0.06
Striped sea robin	27	0.001	0.06
American lobster	25	0.001	0.05
Channeled whelk	21	0.001	0.04
Windowpane flounder	12	0.001	0.03
Haddock	12	0.001	0.02
Longhorn sculpin	11	0.001	0.02
Sea raven	8	0.0004	0.02
Skate, little or winter	8	0.0004	0.02
Whelk, true, unclassified	5	0.0003	0.01
Ocean pout	4	0.0002	0.01
Lady crab	3	0.0002	0.01
Sea urchin, unclassified	2	0.0001	0.004
Worm, unclassified	2	0.0001	0.004
Anemone, unclassified	1	0.0001	0.003
Sea star, unclassified	1	0.0001	0.003
Stony coral, unclassified	1	0.00004	0.001
Sponge, unclassified	1	0.00003	0.001
Witch flounder	0.4	0.00002	0.001
Sand dollar	0.4	0.00002	0.001

Table 7. Estimated total fishery bycatch in pounds for 2016 by species.

	Ocean quahog fishery	Surfclam fishery
2016 landings (lbs meats)	21,036,293	39,428,066
Estimated total bycatch by species		
American lobster	1,340	2,844
American plaice	251	
Anemone, unclassified		146
Barndoor skate	2,291	
Black sea bass	1,333	
Bluefish	198	
Cancer crab, unclassified	18,550	
Channeled whelk		2,351
Clearnose skate	2,007	
Elasmobranch eggs, unclassified		7,994
Fourspot flounder	799	
Haddock		1,288
Hermit crab, unclassified	132	69,239
Horseshoe crab	11,638	146,371
Jonah crab	10,760	3,034
Lady crab		336
Little skate	449,930	267,919
Longhorn sculpin		1,209
Monkfish	206,046	36,176
Moon snail	422	1,402,531
Mussel, unclassified	54,751	1,344,344
Northern sea robin	1,947	39,344
Northern stargazer	2,971	126,576
Ocean pout	370	448
Ocean quahog (round weight)		1,373,410
Red hake	323	
Rock crab	11,011	72,911
Sea raven	33	896
Sea scallop	766,527	32,929
Sea star, unclassified	1,875	134
Sea urchin		235
Silver hake	106	
Skate unclassified	9,902	896
Smooth dogfish	1,459	
Snail, unclassified	40,743	15,899
Spiny dogfish	43,324	18,821
Sponge, unclassified	2,390	67
Spotted hake	158	
Striped sea robin	15,071	2,978
Summer flounder	12,457	6,673
Surfclam (round weight)	846,732	
Whelk unclassified	5,360	537
Windowpane flounder	508	1,366
Winter flounder	59	3,594
Winter skate	48,882	306,446
Worm, unclassified	10,621	190

Table 8. Observed bycatch by trip, in pounds, surfclam observed trips.

Trip	surfclams (round weight)	all OQ	all snails	all scallops	all teleosts	all elasmobranchs	all other inverts
1	112,615		73		16	193	1
2	69,173				498	164	587
3	108,103		2,973		6	2	13
4	41,987		479	35	5	16	226
5	70,072	614	81	85	94	349	34
6	72,063	5			2	39	60
7	85,307		1,687		9	286	11,945
8	112,862		1,699		363	1,226	7
9	43,973				169	3	29
10	33,276			2	239	6	216
11	8,236	7	5	113	8	1	4
12	21,839				12		14
13	20,323	819	47				3
14	53,223		115		24	69	111
15	36,368				29	22	10
16	38,925	1,213	14	2	34	9	99
17	134,701				9	211	1
18	40,048		1		134	85	97
19	15,781	1,785		31	8		6
20	43,503	2,195	9		5	98	147
21	53,223	4		26	99	68	44
22	141,126		1,634		24	51	27
23	169,700		790			15	
24	55,900		124		6	716	30
25	27,363				3	183	12
26	21,091		21			29	4
27	94,932				4	486	
28	119,930		1,953		2	74	4

Table 9. Observed bycatch by trip, in pounds, ocean quahog observed trips.

trip	ocean quahogs (round weight)	all SC	all snails	all scallops	all teleosts	all elasmos	all other inverts
1	158,148		4	2,081	147	425	25
2	338,278			509	180	456	
3	53,535			1,367	44	82	53
4	272,884			2,169	1,536	1,901	3
5	110,072			116	67	291	310
6	123,579			60	213	169	108
7	182,071	9,392		1,220	136	386	159
8	149,225			182	40	172	15
9	197,666			372	111	439	133
10	214,583			698	248	259	4
11	117,521		79	819	178	857	349
12	102,755		5	188	91	234	18
13	225,707			1,285	199	1,329	661
14	119,578			285	168	26	5
15	263,690	3,434		260	320	1,426	22

The most recent benchmark stock assessment for sea scallop was completed in July 2014 (NEFSC 2014). This assessment indicated that the sea scallop stock was not overfished, and overfishing was not occurring.

For the other non-target species, according to the 2016 NE Skate Stock Status Update, little skate and winter skate are not overfished and are not subject to overfishing (NEFSC 2017). [31] Moon snails have not been assessed, therefore their overfished and overfishing status is unknown.

6.2 Physical Environment and Essential Fish Habitat (EFH)

The physical, chemical, biological, and geological components of benthic and pelagic environments are important aspects of habitat for marine species and have implications for reproduction, growth, and survival of marine species. The following sections briefly describe key aspects of physical habitats which may be impacted by the alternatives considered in this document. This information is largely drawn from Stevenson et al. (2004), unless otherwise noted.

6.2.1 Physical Environment

Surfclams and ocean quahogs inhabit the northeast U.S. shelf ecosystem, which includes the area from the Gulf of Maine south to Cape Hatteras, extending seaward from the coast to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The northeast shelf ecosystem includes the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types.

Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents.

The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina.

The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom. The continental shelf in this region was shaped largely by sea level fluctuations caused by past ice ages. The shelf's basic morphology and sediments derive from the retreat of the last ice sheet and the subsequent rise in sea level. Currents and waves have since modified this basic structure.

[31] 2016 NE Skate Stock Status Update available at: https://s3.amazonaws.com/nefmc.org/4_NEFSC_SkateMemo_July_2017_170922_085135.pdf

Shelf and slope waters of the Mid-Atlantic Bight have a slow southwestward flow that is occasionally interrupted by warm core rings or meanders from the Gulf Stream. On average, shelf water moves parallel to bathymetry isobars at speeds of 5 - 10 cm/s at the surface and 2 cm/s or less at the bottom. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate of 20 cm/s that increases to 100 cm/s near inlets.

The shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope (100 - 200 m water depth) at the shelf break. Numerous canyons incise the slope, and some cut up onto the shelf itself. The primary morphological features of the shelf include shelf valleys and channels, shoal massifs, scarps, and sand ridges and swales. Most of these structures are relic except for some sand ridges and smaller sand-formed features. Shelf valleys and slope canyons were formed by rivers of glacier outwash that deposited sediments on the outer shelf edge as they entered the ocean. Most valleys cut about 10 m into the shelf; however, the Hudson Shelf Valley is about 35 m deep. The valleys were partially filled as the glacier melted and retreated across the shelf. The glacier also left behind a lengthy scarp near the shelf break from Chesapeake Bay north to the eastern end of Long Island. Shoal retreat massifs were produced by extensive deposition at a cape or estuary mouth. Massifs were also formed as estuaries retreated across the shelf.

Some sand ridges are more modern in origin than the shelf's glaciated morphology. Their formation is not well understood; however, they appear to develop from the sediments that erode from the shore face. They maintain their shape, so it is assumed that they are in equilibrium with modern current and storm regimes. They are usually grouped, with heights of about 10 m, lengths of 10 - 50 km and spacing of 2 km. Ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. The seaward face usually has the steepest slope. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Swales occur between sand ridges. Since ridges are higher than the adjacent swales, they are exposed to more energy from water currents and experience more sediment mobility than swales. Ridges tend to contain less fine sand, silt and clay while relatively sheltered swales contain more of the finer particles. Swales have greater benthic macrofaunal density, species richness and biomass, due in part to the increased abundance of detrital food and the less physically rigorous conditions.

Sand waves are usually found in patches of 5 - 10 with heights of about 2 m, lengths of 50 - 100 m and 1 - 2 km between patches. Sand waves are primarily found on the inner shelf, and often observed on sides of sand ridges. They may remain intact over several seasons. Megaripples occur on sand waves or separately on the inner or central shelf. During the winter storm season, they may cover as much as 15% of the inner shelf. They tend to form in large patches and usually have lengths of 3 - 5 m with heights of 0.5 - 1 m. Megaripples tend to survive for less than a season. They can form during a storm and reshape the upper 50 - 100 cm of the sediments within a few hours. Ripples are also found everywhere on the shelf and appear or disappear within hours or days, depending upon storms and currents. Ripples usually have lengths of about 1 - 150 cm and heights of a few centimeters.

Sediments are uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0 - 10 m covers most of the shelf. The mean bottom flow from the constant southwesterly current is not fast enough to move sand, so sediment transport must be episodic. Net sediment movement is in the same southwesterly direction as the current. The

sands are mostly medium to coarse grains, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf but is common in the Hudson Shelf Valley.

Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the "mud line," and sediments are 70 - 100% fine on the slope. On the slope, silty sand, silt, and clay predominate (Stevenson et al. 2004).

Greene et al. (2010) identified and described Ecological Marine Units (EMUs) in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative depth), and benthic organisms. According to this classification scheme, the sediment composition off New England and the Mid-Atlantic is about 68% sand, 26% gravel, and 6% silt/mud. The seafloor is classified as about 52% flat, 26% depression, 19% slope, and 3% steep (Table 10).

Artificial reefs are another significant Mid-Atlantic habitat. These localized areas of hard structure were formed by shipwrecks, lost cargoes, disposed solid materials, shoreline jetties and groins, submerged pipelines, cables, and other materials (Steimle and Zetlin 2000). While some of these materials were deposited specifically for use as fish habitat, most have an alternative primary purpose; however, they have all become an integral part of the coastal and shelf ecosystem. In general, reefs are important for attachment sites, shelter, and food for many species, and fish predators such as tunas may be attracted by prey aggregations or may be behaviorally attracted to the reef structure.

Like all the world's oceans, the western North Atlantic is experiencing changes to the physical environment as a result of global climate change. These changes include warming temperatures; sea level rise; ocean acidification; changes in stream flow, ocean circulation, and sediment deposition; and increased frequency, intensity, and duration of extreme climate events. These changes in physical habitat can impact the metabolic rate and other biological processes of marine species. As such, these changes have implications for the distribution and productivity of many marine species. Several studies demonstrate that the distribution and productivity of several species in the Mid-Atlantic have changed over time, likely because of changes in physical habitat conditions such as temperature (e.g. Weinberg 2005, Lucey and Nye 2010, Nye et al. 2011, Pinsky et al. 2013, Gaichas et al. 2015).

Table 10. Composition of EMUs off New England and the Mid-Atlantic (Greene et al. 2010). EMUs which account for less than 1% of the surface area of these regions are not shown.

Ecological Marine Unit	Percent Coverage
High Flat Sand	13%
Moderate Flat Sand	10%
High Flat Gravel	8%
Side Slope Sand	6%
Somewhat Deep Flat Sand	5%
Low Slope Sand	5%
Moderate Depression Sand	4%
Very Shallow Flat Sand	4%
Side Slope Silt/Mud	4%
Moderate Flat Gravel	4%

Deeper Depression Sand	4%
Shallow Depression Sand	3%
Very Shallow Depression Sand	3%
Deeper Depression Gravel	3%
Shallow Flat Sand	3%
Steep Sand	3%
Side Slope Gravel	3%
High Flat Silt/Mud	2%
Shallow Depression Gravel	2%
Low Slope Gravel	2%
Moderate Depression Gravel	2%
Somewhat Deep Depression Sand	2%
Deeper Flat Sand	1%
Shallow Flat Gravel	1%
Deep Depression Gravel	1%
Deepest Depression Sand	1%
Very Shallow Depression Gravel	1%

6.2.2 Essential Fish Habitat (EFH)

Information on surfclam and ocean quahog habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Atlantic Surfclam, *Spisula solidissima*, Life History and Habitat Characteristics." (Cargnelli et al. 1999a) and "Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Characteristics" (Cargnelli et al. 1999b). Electronic versions of these source documents are available at this website:
http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current designations of EFH by life history stage for surfclam and ocean quahog are provided here:

Atlantic surfclam juveniles and adults: EFH habitat is defined as throughout the substrate, to a depth of three feet below the water/sediment interface, within federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90 percent of all the ranked ten-minute squares for the area where surfclams were caught in the NEFSC surfclam and ocean quahog dredge surveys. Surfclams generally occur from the beach zone to a [water] depth of about 200 feet, but beyond about 125 feet abundance is low.

Ocean quahog juveniles and adults: EFH habitat is defined as throughout the substrate, to a depth of three feet below the water/sediment interface, within federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90 percent of all the ranked ten-minute squares for the area where ocean quahogs were caught in the NEFSC surfclam and ocean quahog dredge surveys. Distribution in the western Atlantic ranges in [water] depths from 30 feet to about 800 feet. Ocean quahogs are rarely found where bottom water temperatures exceed 60 ^{o}F, and occur progressively further offshore between Cape Cod and Cape Hatteras.

There are other federally-managed species with life stages that occupy essential benthic habitats that may be susceptible to adverse impacts from hydraulic clam dredges; descriptions

of these are given in Table 1 of Appendix C (from Stevenson et al. 2004) and are available at: http://www.greateratlantic.fisheries.noaa.gov/hcd/list.htm.

6.2.3 Fishery Impact Considerations

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2003). Atlantic surfclam and ocean quahog are primarily landed by hydraulic clam dredges. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the MSA). As stated in section 2.2 of Amendment 13, the prime habitat of surfclam and ocean quahog consists of sandy substrates with no vegetation or benthic 'structures' that could be damaged by the passing of a hydraulic dredge. In these 'high energy' environments, it is thought that the recovery time following passage of a clam dredge is relatively short. Because of the potential that the fisheries adversely impact EFH for a number of managed species, eight action alternatives (including closed area alternatives) for minimizing those impacts were considered by the Council in Amendment 13.

A panel of experts who participated in a 2001 workshop to evaluate the potential habitat impacts of fishing gears used in the Northeast region concluded that there are potentially large, localized impacts of hydraulic clam dredges on the biological and physical structure of sandy benthic habitats (NEFSC 2002). The Council concluded in Amendment 13 that there may be some adverse effects of clam dredging on EFH, but concurred with the workshop panel that the effects are short term and minimal because the fisheries occurs in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats. The panel concluded that biological communities would recover within months to years (depending on what species was affected) and physical structure within days in high energy environments to months in low energy environments. The preamble to the EFH Final Rule (January 17, 2002; 67 FR (Federal Register) 2343) defines temporary impacts as those that are limited in duration and that allow the particular environment to recover without measurable impact.

Additionally, at the time that workshop was held, the overall area impacted by the clam fisheries was relatively small (approximately 100 square nautical miles), compared to the large area of high energy sand on the continental shelf. The closed area alternatives that were considered in Amendment 13 were analyzed for their biological, economic, and social impacts, but given the results of the gear effects analysis in that document (summarized above), the Council concluded that none of them were necessary or practicable. Since 2003, when Amendment 13 was implemented, the area open to surfclam and ocean quahog harvesting has expanded to include a large area on Georges Bank that had previously been closed since 1990 due to the presence of the toxin that causes PSP in the tissues of surfclam and ocean quahog (NMFS 2012 and 2013). As such, a portion of the fishing effort now operates on Georges Bank and the gear is now being used on more complex, hard-bottom habitats (e.g., Nantucket Sholas) than was the case in 2003. The habitat impact analysis conducted by the NMFS concluded that the adverse impacts of renewed clam dredging on Georges Shoal would be minimal and/or temporary as long as dredging was confined to the shallower, more dynamic sandy bottom habitats which were the only areas where it was believed that the gear could be operated.

A portion of the following discussion is excerpted from the NEFMC's Omnibus EFH Amendment 2 (OHA2) which implemented measures designed to minimize to the extent

practicable the adverse effects of fishing on essential fish habitat.[32] The OHA2 employed a spatial explicit model (SASI = Swept Area Seabed Impact) to estimate habitat vulnerability incorporating gear-specific susceptibility (S) and recovery (R) scores for a number of geological and biological habitat features in various subtracts.

Hydraulic clam dredges have been used in the surfclam fishery for over five decades and in the ocean quahog fishery since its inception in the early 1970s. These dredges are highly sophisticated and are designed to: 1) be extremely efficient (80 to 95% capture rate); 2) produce a very low bycatch of other species; and 3) retain very few undersized clams (NEFSC 2002).

The typical dredge is 12 feet wide and about 22 feet long and uses pressurized water jets to wash clams out of the seafloor. Towing speed at the start of the tow is 2.5 knots and declines as the dredge accumulates clams. The dredge is retrieved once the vessel speed drops below 1.5 knots, which can be only a few minutes in very dense beds. However, a typical tow lasts about 15 minutes. The water jets penetrate the sediment in front of the dredge to a depth of about 8 – 10 inches, depending on the type of sediment and the water pressure. The water pressure that is required to fluidize the sediment varies from 50 pounds per square inch (psi) in coarse sand to 110 psi in finer sediments. The objective is to use as little water as possible since too much pressure will blow sediment into the clams and reduce product quality. The "knife" (or "cutting bar") on the leading bottom edge of the dredge opening is 5.5 inches deep for surfclams and 3.5 inches for ocean quahogs. The knife "picks up" clams that have been separated from the sediment and guides them into the body of the dredge ("the cage"). If the knife size is not appropriate, clams can be cut and broken, resulting in significant mortality of clams left on the bottom. The downward pressure created by the runners on the dredge is about 1 psi (NEFSC 2002).

Hydraulic clam dredges can be operated in areas of large-grain sand, fine sand, sand with small-grain gravel, sand with small amounts of mud, and sand with very small amounts of clay. Most tows are made in large-grain sand. Surfclam/ocean quahog dredges are not fished in clay, mud, pebbles, rocks, coral, large gravel >0.5 in (> 1.25 cm), or seagrass beds. For the most part, hydraulic clam dredging is restricted to sandy and muddy sand substrates because the gear can be damaged in hard bottom areas.

In the SASI model, susceptibility and recovery were only evaluated for hydraulic clam dredges for sand and granule-pebble substrates because this gear cannot be operated in mud or in rocky habitats (NEFSC 2002, Wallace and Hoff 2005). In the absence of much published information on the degree to which benthic habitat features are susceptible to this gear, professional judgment relied on the presumption that these dredges have a more severe immediate impact on surface and sub-surface habitat features than other fishing gears used in the Northeast region.

Hydraulic dredges have higher vulnerability scores than otter trawls and scallop dredges, and much higher vulnerability scores than the fixed gears. Across all gears, geological and biological features are generally most susceptible to impacts from hydraulic dredges as compared to other gear types (average scores for all features in a particular substrate and energy environment ranged from 2.5-2.8 out of 3). Average otter trawl and scallop dredge S scores ranged from 1.0 to 2.0. Higher S scores reflect a higher proportion of features with >25% encountered estimated to have a reduction in functional habitat value. For trawls and scallop

[32] Available at: https://www.nefmc.org/library/omnibus-habitat-amendment-2

dredges, there was a larger proportion of high S scores (S=2 or 3) for geological features, especially in mud and cobble, than for biological features; for hydraulic dredges, however, there was very little difference between feature classes.

Geological feature recovery values are slightly higher (i.e., recovery times are longer) for hydraulic dredges than for the other two mobile gears fished in similar habitats (sand and granule-pebble). Average recovery values are more similar for biological features across the three mobile gear types, although in a few cases estimated recovery times are longer for hydraulic dredge gear. This was due to differences in gear effects associated with hydraulic dredges as compared to scallop dredges or otter trawls.

Based on the results of the SASI model, the OHA2 implemented mobile bottom-tending gear throughout various habitat management areas (HMAs) selected by the NEFMC (Figures 6 and 7). In addition, the OHA2 included an exemption for hydraulic clam dredges in many of the HMAs and included a provision for clam dredge exemption for Georges Bank-Nantucket Shoals for a year after implementation of OHA2 to allow time for the NEFMC to consider creating access areas within two of the areas included in the alternatives. The approved HMAs include: (a) establishing new HMAs in Eastern Maine and on Fippennies Ledge where mobile bottom-tending gear is prohibited, (b) maintaining the Cashes Ledge Groundfish Closure Area with current restrictions and exemptions, (c) modifying both the Cashes Ledge and Jeffreys Ledge Habitat Closure Areas, which are closed to mobile bottom-tending gear, (d) prohibiting all fishing gear except lobster pots in the Ammen Rock Area, (e) maintaining the Western Gulf of Maine (WGOM) Habitat Closure Area, which is closed to mobile bottom-tending gear, (f) aligning the boundaries of the WGOM Groundfish Closure Area to match the WGOM Habitat Closure Area, (g) exempting shrimp trawling from the northwest corner of the WGOM areas, and (g) identifying the existing Gulf of Maine Roller Gear restriction as a habitat protection measure.[33]

As indicated above, the surfclam and ocean quahog fisheries was granted a one year exemption for the Great South Channel and Georges Shoal HMAs following implementation of OHA2, which would allow the NEFMC to consider development of an access program through a framework action for this fisheries. The NEFMC intends through this action to identify areas within the Great South Channel and Georges Shoal HMAs that are currently fished or contain high energy sand and gravel that could be suitable for a hydraulic clam dredging exemption that balances achieving optimum yield for the surfclam and ocean quahog fisheries with the requirement to minimize adverse fishing effects on habitat to the extent practicable and is consistent with the underlying objectives of OHA2. The Clam Dredge Framework Action is currently under development by the NEFMC and expected to be finalized in 2019.[34]

[33] For additional information see: https://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf

[34] For additional information see: https://www.nefmc.org/library/clam-dredge-framework

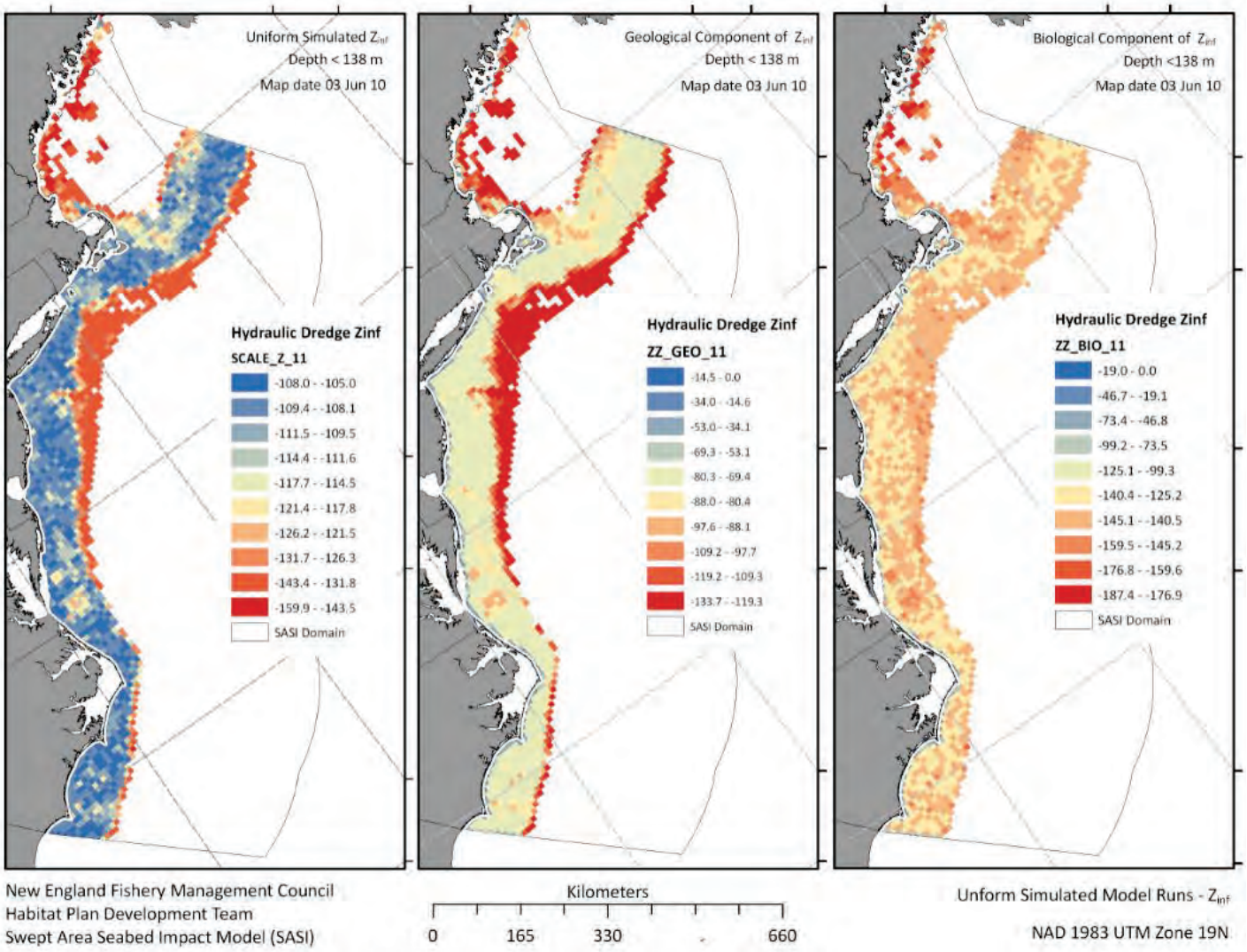


Figure 6. Simulation outputs (Z∞) for hydraulic dredge gear (left panel shows combined vulnerability of geological (mid-panel) and biological features (right-panel); blue=low vulnerability, red=high vulnerability).

Source: https://www.nefmc.org/library/omnibus-habitat-amendment-2

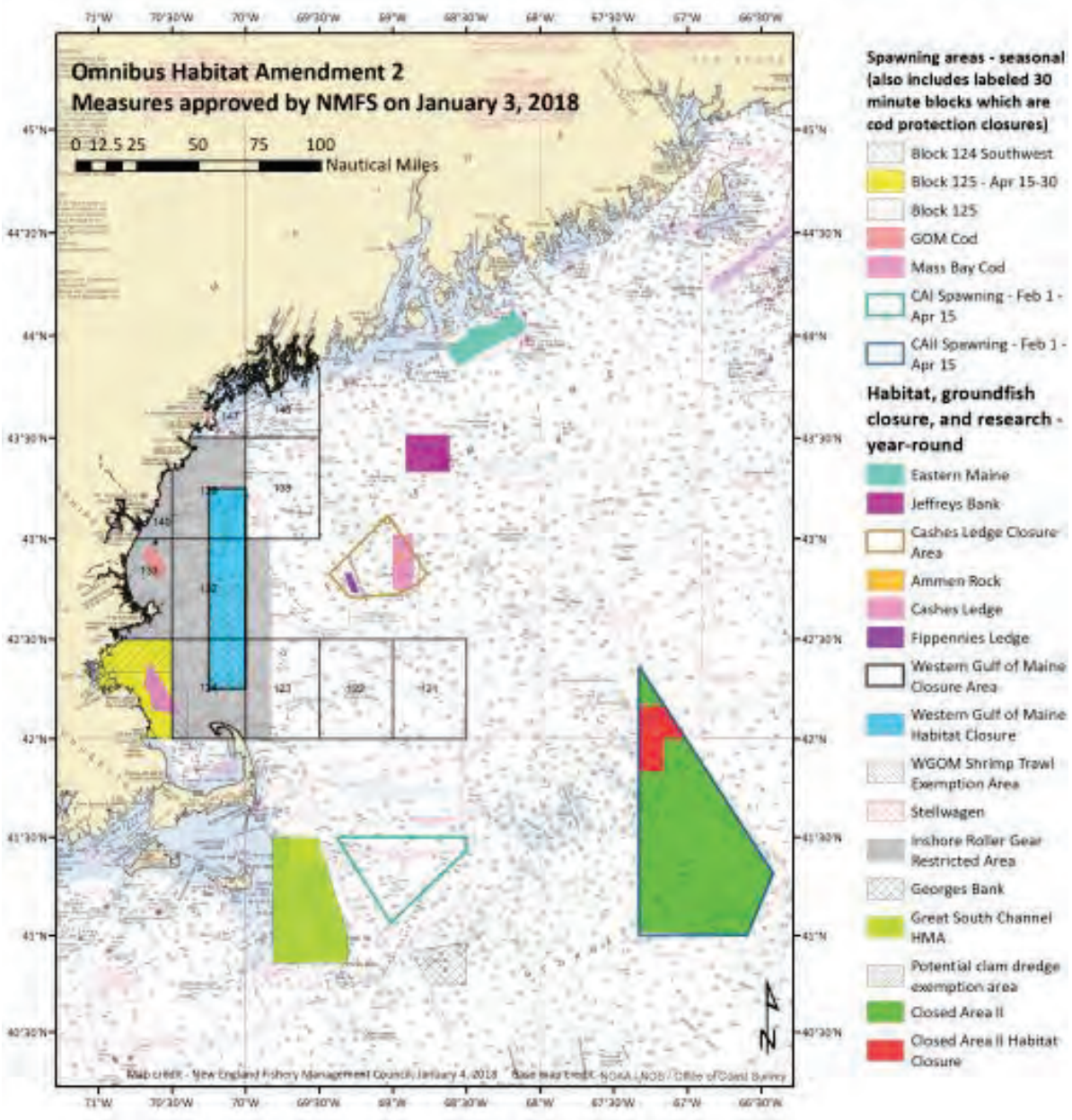


Figure 7. OHA2 approved regulations.
Source: https://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf

6.3 ESA and MMPA Protected Species

Numerous protected species inhabit the affected environment of the Atlantic Surfclam and Ocean Quahog FMP (Table 11; Hayes et al. 2017). These species are under NMFS jurisdiction and are afforded protection under the Endangered Species Act (ESA) of 1973 and/or the Marine Mammal Protection Act (MMPA) of 1972. More detailed description of the species listed in Table 11, including their environment, ecological relationships and life history information including recent stock status, are available at: http://www.greateratlantic.fisheries.noaa.gov/Protected/ and http://www.nmfs.noaa.gov/pr/sars/region.htm.

Cusk, alewife, and blueback herring are NMFS "candidate species" under the ESA. Candidate species are those petitioned species for which NMFS has determined that listing may be warranted under the ESA and those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. If a species is proposed for listing the conference provisions under Section 7 of the ESA apply (see 50 CFR §402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, these species will not be discussed further in this and the following sections; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed action. Additional information on cusk, alewife, and blueback herring can be found at: http://www.nmfs.noaa.gov/pr/species/esa/candidate.htm.

6.3.1 Species and Critical Habitat Not Likely to be Affected by the Proposed Action

The commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. Based on available information, it has been determined that this action is not likely to affect protected species (ESA-listed and/or MMPA protected; see Table 11). Further, this action is not likely to adversely affect any critical habitat for the species listed in Table 11. This determination was made because either the occurrence of the species is not known to overlap with the surfclam and ocean quahog commercial fisheries and/or there have never been documented interactions between the species and the primary gear type (i.e., clam dredge) used to prosecute the fisheries (Palmer 2017; NMFS NEFSC FSB 2015, 2016, 2017; see http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html and http://www.nmfs.noaa.gov/pr/sars/region.htm; https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries). In the case of critical habitat, this determination has been made because the surfclam and ocean quahog fisheries will not affect the essential physical and biological features of North Atlantic right whale or loggerhead (Northwest Atlantic Distinct Population Segment, or DPS) critical habitat and, and therefore, will not result in the destruction or adverse modification of either species critical habitat (NMFS 2014; NMFS 2015a,b). See detailed discussion below.

As provided in Table 11 and Map 1, North Atlantic right whale critical habitat also occurs in the affected environment of the surfclam/ocean quahog FMP. Critical habitat is that habitat identified as containing physical and biological features essential to the conservation of the species. For right whales, it contains the features essential for successful foraging, calving, and calf survival (NMFS 2015a). Although comprised of two areas, only the area in the Gulf of Maine and Georges Bank region (Unit 1) overlaps with the affected environment of the proposed action. Specifically,

approximately half (372nm^2) of the GSC HMA overlaps with Unit 1 of critical habitat (21,334nm^2). This is 1.7% of the total right whale critical habitat. The action alternatives that propose alternative exemption areas for the fishery also have an overlap of less than 1.7%.

The boundaries of Unit 1 were defined by the distribution, aggregation and retention of *Calanus finmarchicus*, the primary and preferred prey of North Atlantic right whales, (NMFS 2015a,b). The essential physical features include prevailing currents, bathymetric features (such as basins, banks, and channels), oceanic fronts, density gradients, and flow velocities. The essential biological features include aggregations of copepods, preferably late stage *C. finmarchicus*, in the Gulf of Maine and Georges Bank region, as well as aggregations of diapausing (overwintering) populations in the deep basins of the region. NMFS (2015a,b) identified activities that may destroy or adversely modify these essential features; navigational dredging (termed "dredging") and commercial fisheries were amongst the activities analyzed and determined to not likely impact the identified foraging area physical or biological features.

"Dredging" as defined in NMFS's assessment (NMFS 2015a; 81 FR 4838, January 27, 2016) should not be confused with dredging using commercial fishing dredges, such as those used in the surfclam/ocean quahog FMP. In the assessment, dredging is in reference to the removal of material from the bottom of water bodies to deepen, widen or maintain navigation corridors, anchorages, or berthing areas, as well as sand mining (NMFS 2015a). Dredges typically used for navigational deepening or sand mining operations include hopper and cutterhead dredges. Although dredge size varies by location, hydraulic hopper dredges have draghead widths from a few feet to 12 feet; cutterhead diameters typically range from 16-20 inches (maximum 36 inches). These dredges disturb the sediment surface (down to 12 or more inches) creating turbidity plumes that last up to a few hours. In contrast, the surfclam/ocean quahog fishery uses hydraulic dredges to capture shellfish by injecting pressurized water into the sediment to a depth of 8-10 inches, creating a trench up to 30 cm deep and as wide as the dredge (approximately 12 feet) (Northeast Region Essential Fish Habitat Steering Committee 2002; see section 5.2.1 and Appendix B).

Navigational/sand mine dredging has not been found to limit the recovery of North Atlantic right whale (NMFS 2017a) or their critical habitat (NMFS 2015a). There is no evidence to suggest that this conclusion does not also hold true for dredging associated with commercial fishing operations. In terms of the surfclam/ocean quahog fishery, the scale and scope of hydraulic clam or mussel dredges is smaller than that associated with navigational/sand mining dredges. Turbidity created from such fishing dredges will be temporary in nature and will not impact the long-term viability of copepod aggregations. Fishing dredges, such as hydraulic clam, may also temporarily disturb localized copepod concentrations; however, these localized patches are continually replaced and/or shifting due to the dynamic oceanographic features of the Gulf of Maine (e.g., strong current, sharp frontal gradients, high mixing rates) that have a large effect on the distribution, abundance, and concentration of zooplankton populations in within the Gulf of Maine (NMFS 2015b). As provided above, one of the essential biological features of Unit 1 include aggregations of diapausing (overwintering) *C. finmarchicus* populations in the deep basins (i.e., Jordan, Wilkinson and Georges Basins) of the Gulf of Maine/Georges Bank Region. These basins provide refugia for diapausing populations of *C. finmarchicus* and serve as source populations for the annual recruitment of copepods into the Gulf of Maine population (Davis 1987; Meise and O'Reiley 1996; Lynch et al. 1998; Johnson et al. 2006). In late winter, diapausing *C. finmarchicus* emerge from

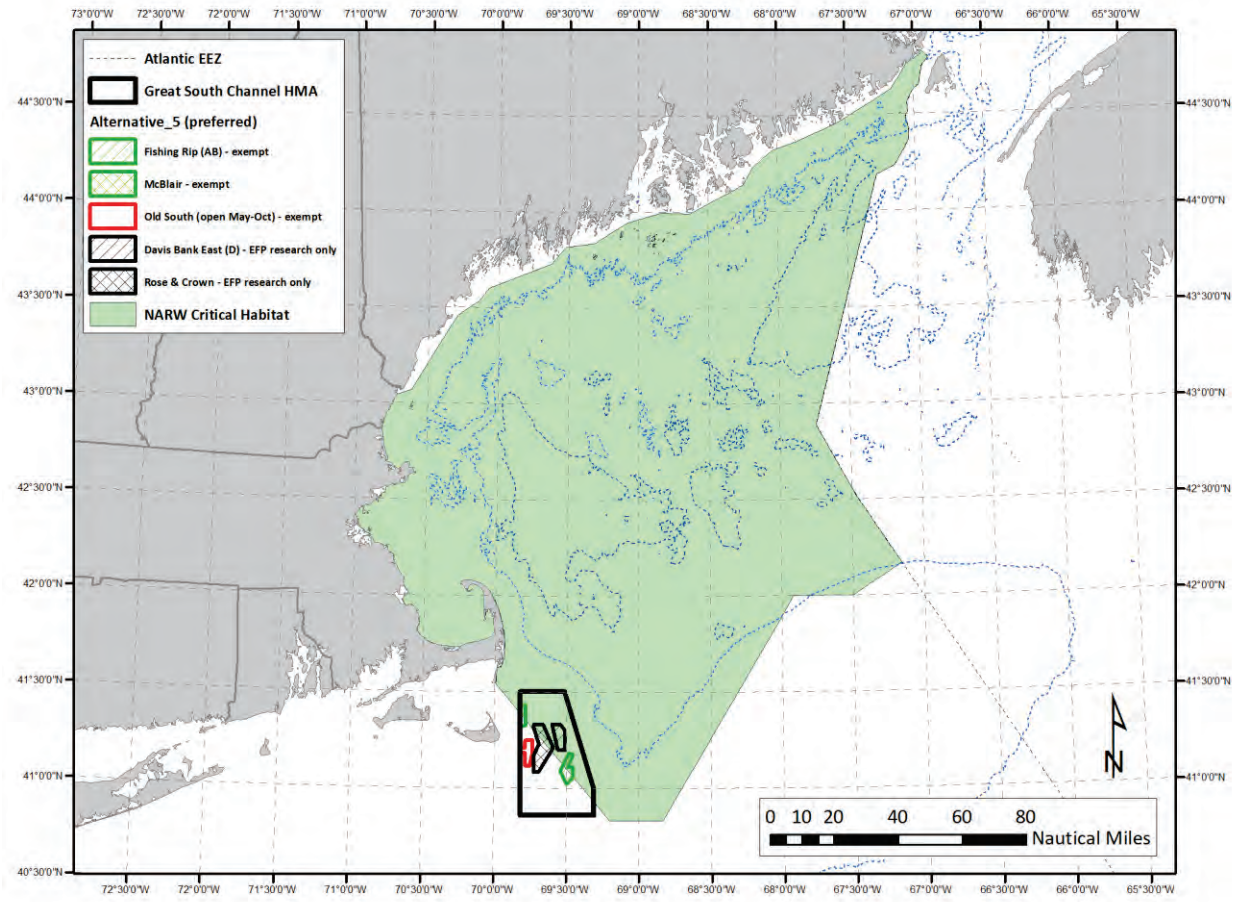
their dormant state and migrate to the surface layer where they are transported/advected to other areas within the Gulf of Maine by prevailing circulation patterns (Davis 1987; Baumgartner et al. 2007; Lynch et al. 1998; Johnson et al. 2006) . Depending on where copepods are transported, concentrated patches of copepods within the Gulf of Maine and GB region will be variable, both spatially and seasonally. Due to the dynamic physical oceanographic features of the Gulf of Maine and GB, copepods will continuously be advected from the deep ocean basins to areas throughout the Gulf of Maine and GB region. As hydraulic clam dredges do not operate in the deep basins of the Gulf of Maine /GB, these fishing gears will not affect or disrupt diapausing *C. finmarchicus* populations that are essential for populating the Gulf of Maine and George's Bank with right whales' preferred prey source. Based on this, although operation of the surfclam/ocean quahog FMP within regions of the Gulf of Maine or GB have the potential to cause temporary and localized disturbances of aggregations of copepods, it will not result in the permanent removal of the forage base necessary for right whale recovery. In addition, operation of hydraulic clam will not have any potential to affect the essential physical oceanographic features (i.e., currents, temperature, bathymetry) of Unit 1.

Given that (1) the impacts are temporary and localized, (2) the overlap of critical habitat and the alternatives is less than 1.7%, and (3) the activity is limited in scale and scope, the operation of the surfclam/ocean quahog fisheries will not affect the essential physical and biological features of North Atlantic right whale critical habitat and, therefore, will not result in the destruction or adverse modification of this species critical habitat (NMFS 2015a,b). The GSC HMA and proposed exemptions areas in the Great South Channel do not meet the adverse modification threshold and are not expected to impact right whale recovery.

Table 11. Species Protected Under the ESA and/or MMPA that may occur in the affected environment of the Atlantic surfclam and ocean quahog Fisheries. Marine mammal species (cetaceans and pinnipeds) italicized and in bold are considered MMPA strategic stocks.

Species	Status	Potentially affected by this action?
Cetaceans		
North Atlantic right whale (Eubalaena glacialis)	*Endangered*	No
Humpback whale, West Indies DPS (Megaptera novaeangliae)	Protected (MMPA)	No
Fin whale (Balaenoptera physalus)	*Endangered*	No
Sei whale (Balaenoptera borealis)	*Endangered*	No
Blue whale (Balaenoptera musculus)	*Endangered*	No
Sperm whale (Physeter macrocephalus	*Endangered*	No
Minke whale (*Balaenoptera acutorostrata*)	Protected (MMPA)	No
Pilot whale (Globicephala spp.)[1]	*Protected (MMPA)*	No
Risso's dolphin (*Grampus griseus*)	Protected (MMPA)	No
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected (MMPA)	No
Short Beaked Common dolphin (*Delphinus delphis*)[2]	Protected (MMPA)	No
Bottlenose dolphin (Tursiops truncatus)[3]	*Protected (MMPA)*	No
Harbor porpoise (*Phocoena phocoena*)	Protected (MMPA)	No
Sea Turtles		
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered	No
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered	No
Green sea turtle, North Atlantic DPS (*Chelonia mydas*)	Threatened	No
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic Ocean DPS	Threatened	No
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered	No
Fish		
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	No
Atlantic salmon (*Salmo salar*)	Endangered	No
Atlantic sturgeon *(Acipenser oxyrinchus)*		
Gulf of Maine DPS	Threatened	No
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered	No
Cusk (*Brosme brosme)*	Candidate	No
Pinnipeds		
Harbor seal (*Phoca vitulina*)	Protected (MMPA)	No
Gray seal (*Halichoerus grypus*)	Protected (MMPA)	No
Harp seal (*Phoca groenlandicus*)	Protected (MMPA)	No
Hooded seal (*Cystophora cristata*)	Protected (MMPA)	No
Critical Habitat		
North Atlantic Right Whale	ESA (Protected)	No

[1] Due to the difficulties in discriminating short finned (*G. melas melas*) and long finned (*G. macrorhynchus*) pilot whales at sea, they are often just referred to as *Globicephala spp*.
[2] Called "common dolphin" before 2008.
[3] Includes the Western N. Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks.



Map 1. North Atlantic Right Whale Critical Habitat in the Gulf of Maine, GSC HMA, and proposed action exemption areas and research areas. Additional areas of critical habitat are designated along the coasts of South Carolina, Georgia, and Florida, but are not shown here.

6.4 Human Communities and Economic Environment

When Amendment 13 to the FMP was developed, the Council hired Dr. Bonnie McCay and her associates at Rutgers University to describe the ports and communities that are associated with the surfclam and ocean quahog fisheries. The researchers did an extensive job characterizing the three main fisheries (non-Maine ocean quahog, Maine ocean quahog, and surfclam). The McCay team characterizations of the ports and communities are based on government census and labor statistics and on observations and interviews carried out during the late 1990s and in the fall of 2001. The description of the fishing gear, areas fished, etc. are fully described in Amendment 13. Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs (MAFMC 2003). Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine (MAFMC 2018a and 2018b). The small scale Maine fishery is entirely for

ocean quahogs, which are sold as shellstock for the half-shell market (MAFMC 2018b). The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products (MAFMC 2018a and 2018b).

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: https://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php. In addition, Fishery Performance Reports prepared by industry advisors, provide additonal information on the social and economic environments and are available at: http://www.mafmc.org. Recent trends in the fisheries are presented below.

6.4.1 Fishery Descriptions

6.4.1.1 Atlantic Surfclam

The total number of vessels participating in the surfclam fishery has remained relatively stable in the recent decade (Table 12). In 2017, about 2.2 million bushels of surfclams were landed, slighlty lower than 2016 at 2.3 million bushels. The average ex-vessel price of surflcams reported by processors was $13.90 in 2017, slightly higher than the $13.25 per bushel seen in 2016. The total ex-vessel value of the 2017 federal harvest was approximately $31 million, the same as 2016. Industry has described several factors that have affected their industry. Major users of clam meats have reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace. The costs to vessels harvesting clams has increased due to the rising costs of insurance; industry has also indicated price of diesel fuel in conjunction with distance traveled to fish is a big factor determining trip cost. Trips harvesting surfclams have increased in length as catch rates have declined (MAFMC 2009, 2010, 2013).

As indicated above, surfclams on Georges Bank were not fished from 1990 to 2008 due to the risk of PSP. There was light fishing on Georges Bank in years 2009-2011 under an exempted fishing permit and landings per unit of effort (LPUE) in that area was substantially higher (5-7 times higher) than in other traditional fishing grounds. NMFS reopened a portion of Georges Bank to the harvest of surfclam and ocean quahog beginning January 1, 2013 (77 FR 75057, December 19, 2012) under its authority in 50 CFR §648.76. Subsequently, NMFS reopened an additional portion of Georges Bank beginning August 16, 2013 (78 FR 49967). Harvesting vessels have to adhere to the recently adopted testing protocol developed by the National Shellfish Sanitation Program.

6.4.1.2 Ocean Quahogs

The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend as the fisheries moved beyond a market crisis in 2005 where major users of clam meats reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace. The costs to vessels harvesting clams has increased due to the rising costs of insurance; industry has also indicated price of diesel fuel in conjunction with distance traveled to fish is a big factor determining trip cost. Trips harvesting quahogs have also increased in length as catch rates have declined steadily.

(MAFMC 2009, 2010, 2013). The 30 or so vessels that reported landings during 2004 and 2005 has consolidated over time into fewer vessels.

The Maine ocean quahog fleet numbers started to decline when fuel prices soared in mid-2008, and a decline in the availability of smaller clams consistent with the market demand (i.e., half-shell market), and totaled 8 vessels in 2017 (Table 12).

The average ex-vessel price of non-Maine ocean quahogs reported by processors in 2017 was $7.18 per bushel, one cent higher than the 2016 price ($7.17 per bushel). In 2017, about 3.2 million bushels of non-Maine ocean quahog were landed, slightly higher than 2016 at 3.0 million bushels. The total ex-vessel value of the 2017 federal harvest outside of Maine was approximately $23 million, slightly higher than the $22 million in 2016.

In 2017, the Maine ocean quahog fleet harvested a total of 34,550 Maine bushels, a 72% decrease from the 124,839 bushels harvested in 2006, and a 7% decrease from the prior year (2016; 37,051 bushels). Average prices for Maine ocean quahogs have declined substantially over the past 15 years. In 2003, there were very few trips that sold for less than $37.00 per Maine bushel, and the mean price was $40.66. Prices have since been lower; industry has indicated it was the result of aggressive price cutting. In 2017, the mean price was $31.15 per Maine bushel. The value of the 2017 harvest reported by the purchasing dealers totaled $1.1 million, a decrease of 78% when compared to 2003.

6.4.2 Description of the Areas Fished

A detailed description of the areas fished by the fisheries for surfclam and ocean quahogs was presented in Amendment 13 to the FMP (MAFMC 2003).

The commercial fishery for surfclam in Federal waters is prosecuted with large vessels and hydraulic dredges. The distribution of the fishery as catch and LPUE is shown in Figures 8 and 9. The commercial fishery for ocean quahogs in Federal waters is prosecuted with large vessels and hydraulic dredges, and is very different from the small Maine fishery prosecuted with small vessels (35-45 ft).

6.4.3 Port and Community Description

Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs. Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine. The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products (see section 6.4).

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: http://www.nefsc.noaa.gov/read/socialsci/communityProfiles.html.

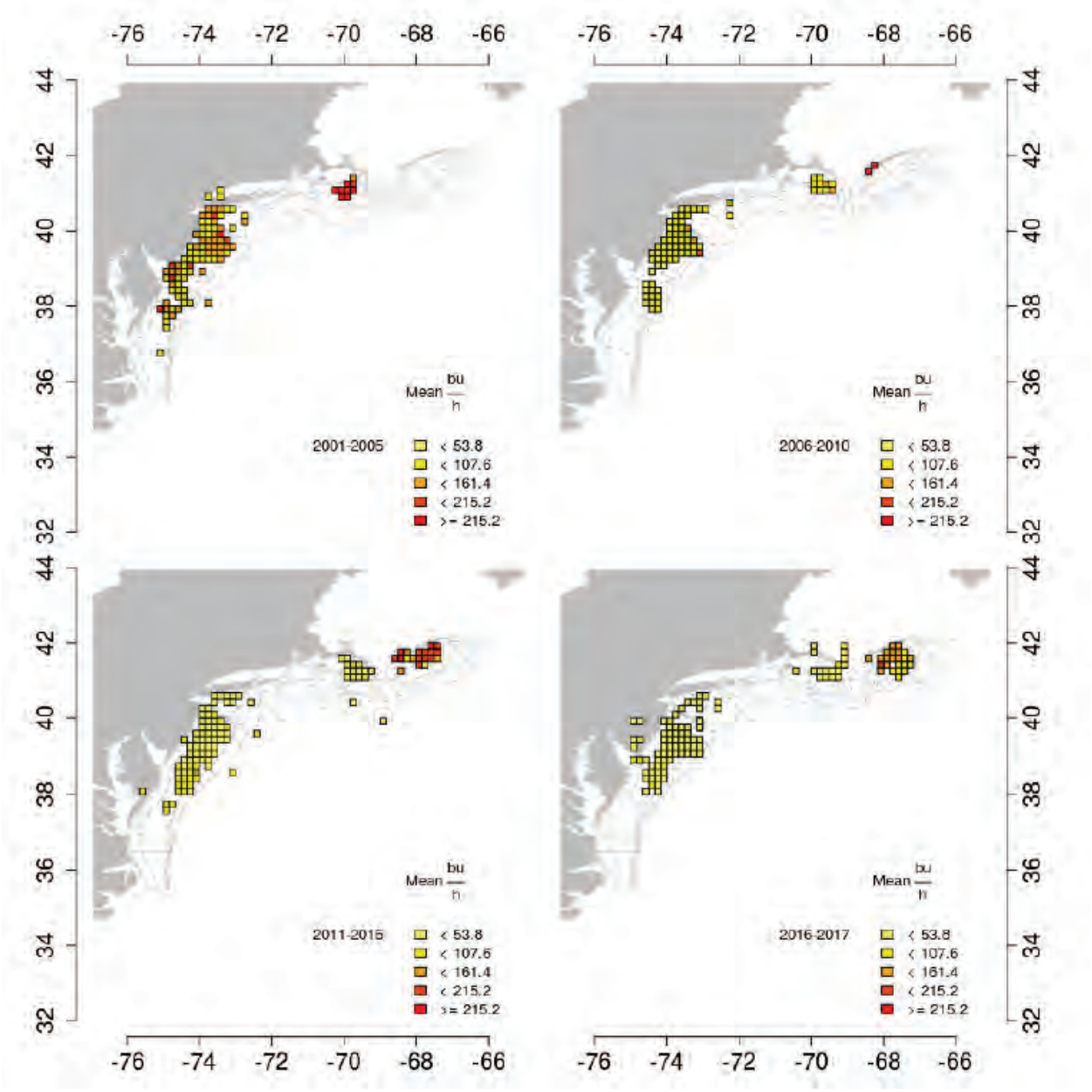


Figure 8. Average surfclam landings per unit effort (LPUE; bu h-1) by ten-minute squares over time, 2001-2016 and preliminary 2017. Only squares where more the 5 kilo bushels were caught are shown. Source: Dan Hennen Personal Communication, March 22, 2018.

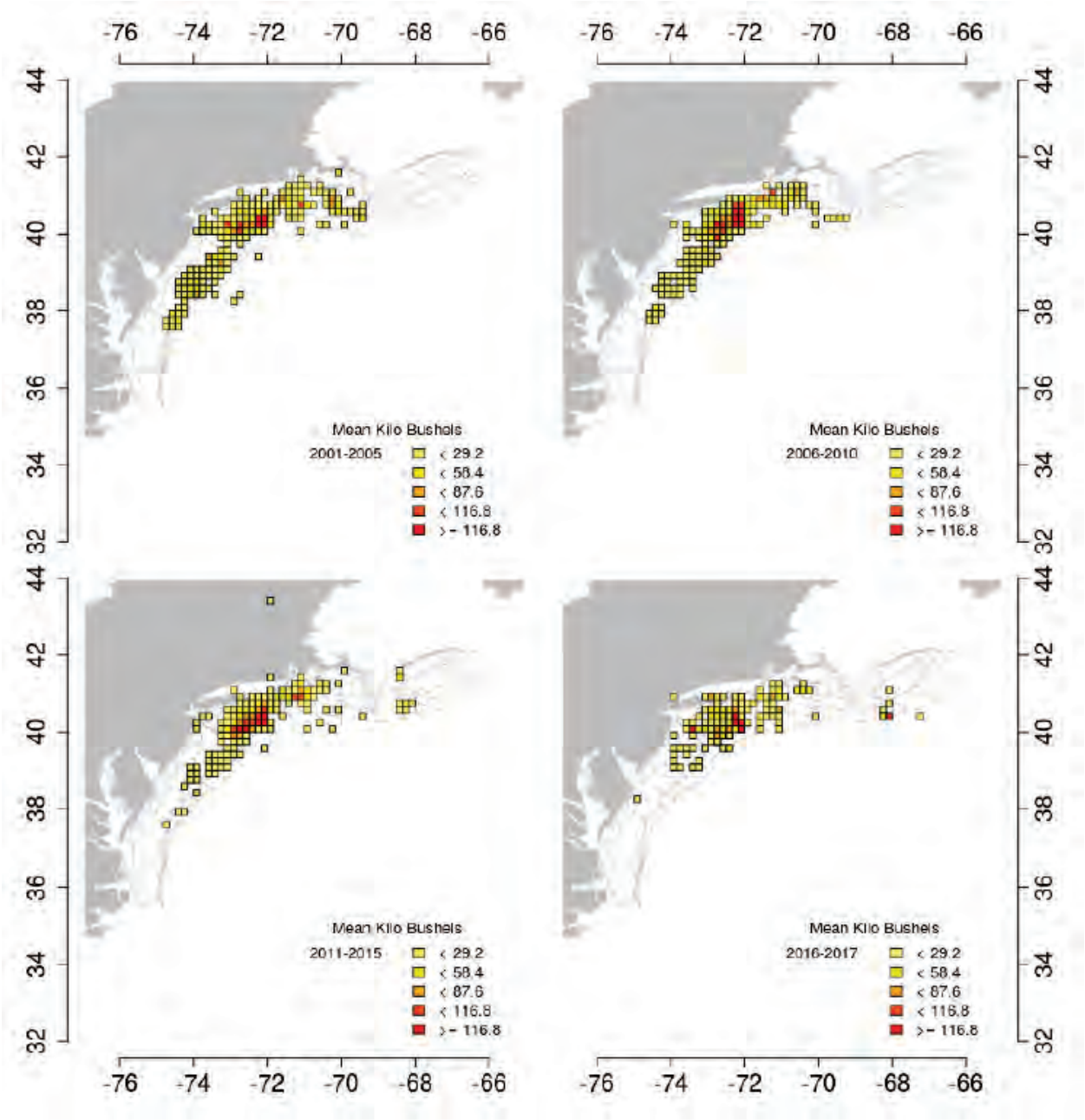


Figure 9. Average ocean quahog landings by ten-minute squares over time, 2001-2016, and preliminary 2017. Only squares where more the 5 kilo bushels were caught are shown.
Source: Dan Hennen Personal Communication, March 22, 2018.

6.4.4 Vessels and Dealers

Vessels

The total number of vessels participating in the surfclam fishery has been relatively stable from 2004 through 2017, ranging from 29 vessels in 2006 to 40 vessels in 2017 (Table 12). [35] The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend as the fisheries moved beyond a market crisis in 2005 where major users of clam meats reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace. Industry has indicated costs to vessels harvesting clams have increased significantly, with the greatest component being the cost of diesel fuel. Trips harvesting quahogs have also increased in length as catch rates have declined steadily (MAFMC 2009, 2010, 2013). The 30 or so vessels that reported ocean quahog landings during 2004 and 2005 was reduced and coast-wide harvests consolidated on to approximately 20 vessels in the subsequent years. The Maine ocean quahog fleet numbers started to decline with fuel prices soaring in mid-2008 and totaled 8 in 2017 (Table 12).

Initially, 154 vessel received ITQ allocation in 1990; however, in the last decade there have been fewer than 50 vessels participating in the fisheries each year. While it is not possible to accurately project future vessel consolidation patterns, it is possible that under additional vertical integration the number of vessels participating in the fisheries could decerase further. Vertically integrated companies could choose to retire older less efficient vessels (for larger, newer, more efficient ones). In addition, there could be further departure of the few independent harvesters still participating in the fisheries. In 2016 and 2017, a handful of independent vessels (less than 5) reported landings of surcalms and ocean quahogs.

Table 12. Surfclam and ocean quahog active vessels composition, 2004-2017.

Vessel-type	Harvested Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Non-Maine Vessels	Both surfclam & quahog	14	12	9	9	8	8	12	12	13	7	7	6	8	14
	Only surfclam	21	24	20	24	24	28	22	24	29	33	31	31	30	26
	Only quahog	15	12	9	8	10	7	9	7	6	9	9	10	9	8
	Total	50	48	38	41	42	43	43	43	48	49	47	47	47	48
Maine Vessels	Only quahog	34	32	25	24	22	19	15	13	12	11	9	8	8	8

Dealers

In 2017, there were 9 companies (i.e., dealers) reporting purchases of surfclam and/or ocean quahog from the industrial fisheries outside of Maine. These 9 companies operated 15 different

[35] The reported number of vessels participating in the surfclam and/or ocean quahog fisheries in this document are derived from clam logbook data unless otherwise noted.

facilities located in multiple states. They were distributed by state as indicated in Table 13. Employment data for these specific firms are not available. In 2017, these companies bought approximately $23 million worth of ocean quahog and $31 million worth of surfclam.

Table 13. Number of facilities that reported buying ocean quahog and surfclam by state (from NMFS dealer/processor report database) in 2017.

	MA	NJ	Other
Number of Facilities	8	3	4

6.4.5 ITQ Program and Market Description

Initial ITQ Allocations

The FMP to manage the Atlantic surfclam and ocean quahog fisheries was initiated in 1977. The FMP and subsequent Amendments (i.e., Amendments 1 through 7) can be credited with rebuilding the surfclam stock and contributing to some economic stability in the industry. However, by the mid-1980s, rapid growth in harvesting capacity in the surfclam fishery and associated inefficiencies (e.g., vessels could only fish 36 hours per quarter) led to the development of the ITQ system (MAFMC 1988).

The initial allocations of ITQ quota share were made to owners of all permitted vessels that harvested surfclams and/or ocean quahogs in the Atlantic EEZ from 1979 through 1988. In general terms, the formula for allocating surfclams in the Mid-Atlantic Area was based on average historical catch (80% of the allocation) plus a "cost factor" (20% of the allocation) based on the vessel's capacity (length x width x depth; a proxy for the owner's capital investment). For ocean quahogs, the allocation was simply based on the average historical catch. This meant that the initial ITQ shares were allocated to owners of surfclam and ocean quahog vessels (MAFMC 1988).

From the initial implementation of the ITQ system in 1990, there were very limited restrictions on transfer of quota shares (MAFMC 1988). The ITQ program for surfclams and ocean quahogs allows allocation owners to permanently transfer the ITQ quota share (i.e., sale, permanent transfer) or lease ITQ out (i.e., cage tag leasing, temporary annual transfer). Since the surfclam and ocean quahog ITQs are transferable, this allows for shifts in production to participants that may be more efficient.

In the years before the surfclam and ocean quahog ITQ system was implemented, there was a build-up in the number of vessels participating in these fisheries, as vessel owners sought to build-up catch histories in order to obtain more ITQ quota share upon program implementation.[36] When the ITQ system was implemented, there were 125 vessels participating in the surfclam and ocean quahog fisheries (Färe et al. 2015).

[36] It is also possible that the increase in vessels in an owner's fleet may have been in response to management measures limiting fishing time per vessel.

Trends in Consolidation

As indicated above, the original surfclam and ocean quahog ITQ allocations went to owners of vessels that qualified for the program and the initial ITQ system. The ITQ program provided a great deal of flexibility for transferability of ITQ quota share (sale or lease). Some of the individuals that received initial allocations of ITQ quota share sold out, while others acquired additional shares.

The surfclam and ocean quahog ITQ program contained very few restraints on ownership or transfer of ITQ quota share, and as such, the program was extremely effective in rapidly eliminating economically excessive capacity (National Research Council 1999). Harvesters could consolidate their catch onto fewer vessels that could then operate at or near full capacity. A number of vessel owners, including vertically integrated processors, had assembled large fleets during the 1980s, and thus many owners were in a position to take one or more of their vessels out of the surfclam fishery to economize (McCay and Brandt 2001). Furthermore, some vessel owners took advantage of the surfclam and ocean quahog ITQ program to divest themselves of the older vessels they had accumulated during the moratorium, while other owners chose to lease their ITQ quota share to others or to leave the surfclam fishery entirely (McCay and Brandt 2001). The major decrease in the number of vessels participating in the clam fisheries occurred, as expected, at the onset of the program. There has been a large degree of further consolidation in the last 30 years.

For the 3 years (1987-1989) prior to the implementation of the ITQ system, there were on average, 137 and 67 active vessels fishing for quota in the surfclam and ocean quahog fisheries, respectively. On average, for the 5 years after the ITQ program implementation (1990-1995), the number of active vessels participating in the surfclam fisheries had decreased to 73 vessels and the number of active vessels participating in the ocean quahog fisheries had increased to 76 vessels (Brinson and Thunberg 2013, 2016). There have been further reductions in the number of active vessels participating in these fisheries through time. In 2017, there were 48 vessels participating in these fisheries in (Table 12). One of the goals of the ITQ system in these fisheries was to reduce fleet capacity. From this perspective the program has met this goal, as more efficient operations purchased the quota share of less efficient operations, removing redundant capital from the fisheries.

Upon the program implementation in 1990, there were 154 entities (i.e., unique surfclam allocation holders/vessel owners) that received an initial Atlantic surfclam allocation of quota share. The number of entities receiving quota share decreased to 116 after the first year of implementation. The number of entities holding surfclam quota share remained relatively stable for the 1991 to 2000 period, ranging from 107 to 117 (Brinson and Thunberg 2013). However, since 2005 the number of entities holding surfclam quota share declined from 81 (Brinson and Thunberg 2013) to 67 in 2017 (2017 Atlantic surfclam ITQ Allocation Holder Report).[37]

There were 117 entities (i.e., unique ocean quahog allocation holders) that received an initial ocean quahog allocation of quota share in 1990. The number of entities receiving quota share decreased to 82 after the first year of implementation There was a slight steady reduction from year to year in the number of entities holding quota share from 1992 (82 entities) to 2003 (62 entities; Brinson

[37] Available at: https://www.greateratlantic.fisheries.noaa.gov/sustainable/species/clam/

and Thunberg 2013). However, since 2004 the number of entities holding surfclam quota share declined from 56 (Brinson and Thunberg 2013) to 37 in 2017 (2017 Atlantic surfclam ITQ Allocation Holder Report).[37]

There have been other reasons for consolidation. The cost of fuel prices and the distance needed to travel to harvest clams, which cascades through the vessel, processors, ports, etc., and has put greater emphasis on economy on scale and location, leading to additional consolidation (Surfclam and Ocean Quahog Advisory Panel 2016). Other factors that have caused stress in the industry have also resulted in additional consolidation. For example, in 2005 a series of conditions resulted in a substantial portion of the industrial fleet leaving the clam fishery and greatly reduced operations at the second-largest processor in the clam industry. Eastern Shore Seafood Products of Mappsville, Virginia was a vertically-integrated company operating both vessels and a processing plant. In 2005, a deal was struck in which ownership of the plant and vessels were given over to an entity including the Truex, Meyers, Truex Group, and the Sea Watch management team. In May of 2008 the Mappsville plant ceased operations altogether and moved the processing work to other Sea Watch plants in Easton, Maryland and Milford, Delaware (Vaughn 2008).

A myriad of factors has contributed to the difficulties in the clam industry. Major users of clam meats have reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace. The costs to vessels harvesting clams has increased due to the rising costs of fuel and insurance. Trips harvesting surfclams have increased in length as catch rates have declined. All of these factors and more have resulted in clam-related businesses becoming less profitable in recent years. Consolidation and concentration in the industry has grown as the businesses in the strongest financial condition assimilate those in the weakest position (MAFMC 2009, 2010).

Processors were not directly incorporated into the initial allocation of quota; however, processors owning permitted vessels received the allocations associated with those vessels. Some processors or processors affiliates have developed quota ownership through either the acquisition of vessels and accompanying quota or the acquisition of quota directly (Mitchell et al. 2011).

Historically, vertically-integrated firms have been involved in the surfclam and ocean quahog fisheries. Some of these were subsidiaries of multinational food corporations with fleets of a dozen or so boats; others a family business with large fleets; and yet others were small rural processing operations with one or two boats of their own. The ability of processors to rely on their own vessels to supply raw product for their plants gave them bargaining power vis à vis the “independents” (McCay and Brandt 2001). With implementation of the Atlantic surfclam and ocean quahog ITQ program, an industry already marked by the dominance of a few large vertically integrated firms became even more so, as small-holders either sold out or chose to lease out their allocations rather than continue to fish (McCay et al. 2011).

In order for processors to meet delivery schedules set by their customers (many of which are large consumer goods companies, such as Progresso or Campbell Soup Company, or large food service companies, such as Sysco) results in that virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates. Processors need to be able to

direct vessels to harvest at certain times, weather permitting. Given these scheduling requirements, it is not generally possible for a vessel to harvest for more than one processor and still meet the scheduling needs of the processors. Vessels must have quota at the time they harvest clams. Therefore, processors or fishers must arrange for the quota that the vessels require prior to leaving port. As a result of the need to harvest on a schedule, virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates (Mitchell et al. 2011).

Under the Atlantic surfclam and ocean quahog ITQ program, the ownership of ITQ quota share has replaced the ownership of surfclam vessels as a way to secure the supply of surfclams as raw materials. Prior to the ITQ program, only surfclam vessels with moratorium permits were allowed to harvest surfclams in the Mid-Atlantic Area, the predominant surfclam area. As a result, clam processors owned and operated surfclam vessels to secure the supply of surfclams. However, any U.S. registered vessels are allowed to harvest surfclams under the Atlantic surfclam and ocean quahog ITQ program as long as they hold surfclam ITQ quota share. Therefore, the ownership of ITQ quota share becomes the key element. In fact, some of the integrated processors have abandoned their vessel operations and focused on securing the ownership of ITQ quota share (Wang 1995).

The term "HHI" means the Herfindahl–Hirschman Index, a commonly accepted measure of market concentration (an indicator of the amount of competition in the marketplace). The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. According to the U.S. DOJ & Federal Trade Commission (FTC), Horizontal Merger Guidelines § 5.3 (2010), transactions that increase the HHI by more than 200 points in highly concentrated markets are presumed likely to enhance market power. [38]

NMFS data also show that the concentration of harvesting has risen substantially in the last decade, largely as the result of the backward integration of clam processors into harvesting (Mitchell et al. 2011). The processing sector itself has also changed. In 1979, there were 44 plants that processed either surfclams or ocean quahogs. The HHI of purchases by processors grew between 2003 and 2008 from 2,068 to 3,134 for surfclams and from 3,431 to 4,369 for ocean quahogs (Mitchell et al. 2011). Concentration has fallen somewhat after peaking in the surfclam and ocean quahog fisheries at 3,675 and 4,629, respectively, in 2007. The HHI of processor purchases for surfclams and ocean quahogs combined has also grown, from 2,226 in 2003 to 3,479 in 2008. In 2017, there were nine firms operating 15 plants in multiple states (section 6.4.4).

In addition, NMFS has also conducted an analysis of quota usage by examining records showing the harvest amounts for vessels in the surfclam and ocean quahog fisheries and tracing their

[38] The HHI is equal to the sum of the squared market shares of the participants in the market. Thus, if there are three firms with shares of 50%, 30%, and 20%, the HHI is equal to 3,800 ($3,800 = 50^2 + 30^2 + 20^2 = 2500 + 900 + 400 = 3800$). The HHI value approaches zero when a specific market comprises a large number of similar firms, and reaches 10,000 when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. Markets in which the HHI is between 1,500 and 2,500 points are typically considered to be moderately concentrated and markets in which the HHI is in excess of 2,500 points are considered to be highly concentrated. https://www.justice.gov/atr/herfindahl-hirschman-index

ownership. This analysis indicated that the HHI of harvesting activity for surfclams in 2008 was 4,080 and the HHI of harvesting activity for ocean quahogs was 2,653. The HHI of harvesting activity for surfclam and ocean quahog combined was 2,890. Lastly, the HHI of ownership (quota ownership) of surfclam quota in 2009 was 1,167, and the HHI of ownership of ocean quahog quota was 993 (Mitchell et al. 2011).

The HHI of harvesting (2006-2008) and processing (2005-2008) in the surfclam and ocean quahog fisheries estimated by NMFS (NMFS 2009) would be considered highly concentrated by the DOJ. Updated HHI values for the harvesting and processing sectors (John Walden, Pers. Comm., NEFSC 2019) are presented in Figures 10 and 11. These figures indicate that the harvesting and processing sectors for the surfclam and ocean quahog fisheries continue to be highly concentrated (2016-2018). The processing sector HHI values for 2016-2018 were calculated using the same methods as were used through 2008. However, the harvesting sector HHI values for 2016-2018 were calculated using a different method than was used through 2009. More specifically, in order to identify ownership for the 2016-2018 period, vessel ownership data was used in conjunction with permit database to identify all the individuals who own one or more vessels by firm. In addition, online resources provided additional company and vessel information to identify vessel ownership.

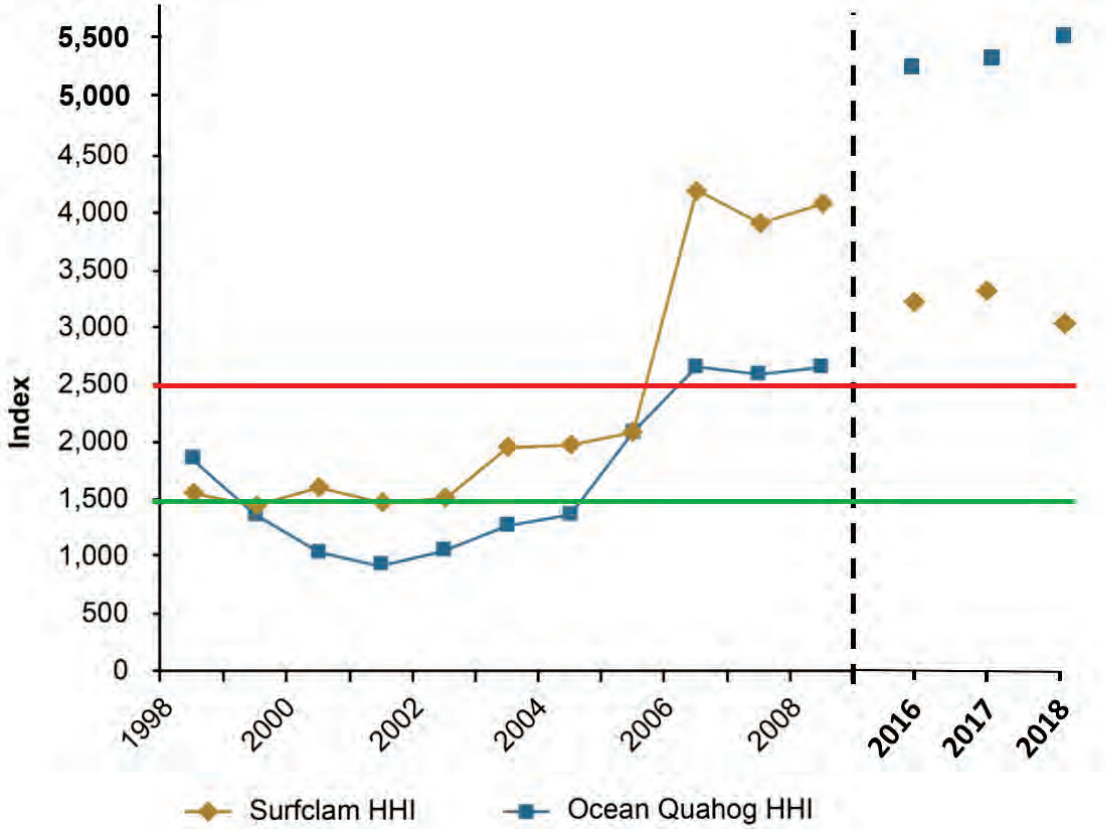


Figure 10. Herfindahl-Hirschman Index (HHI) of Market Concentration in Surfclam and Ocean Quahog Harvesting Sector, 1998-2008 (adapted from NMFS (2009)) and updated 2016-2018.

Note: HHI values below the green line (1,500) shows Unconcentrated Markets; HHI values between the green line (1,500) and red line (2,500) shows Moderately Concentrated Markets; HHI values above the red line (2,500) shows Highly Concentrated Markets.

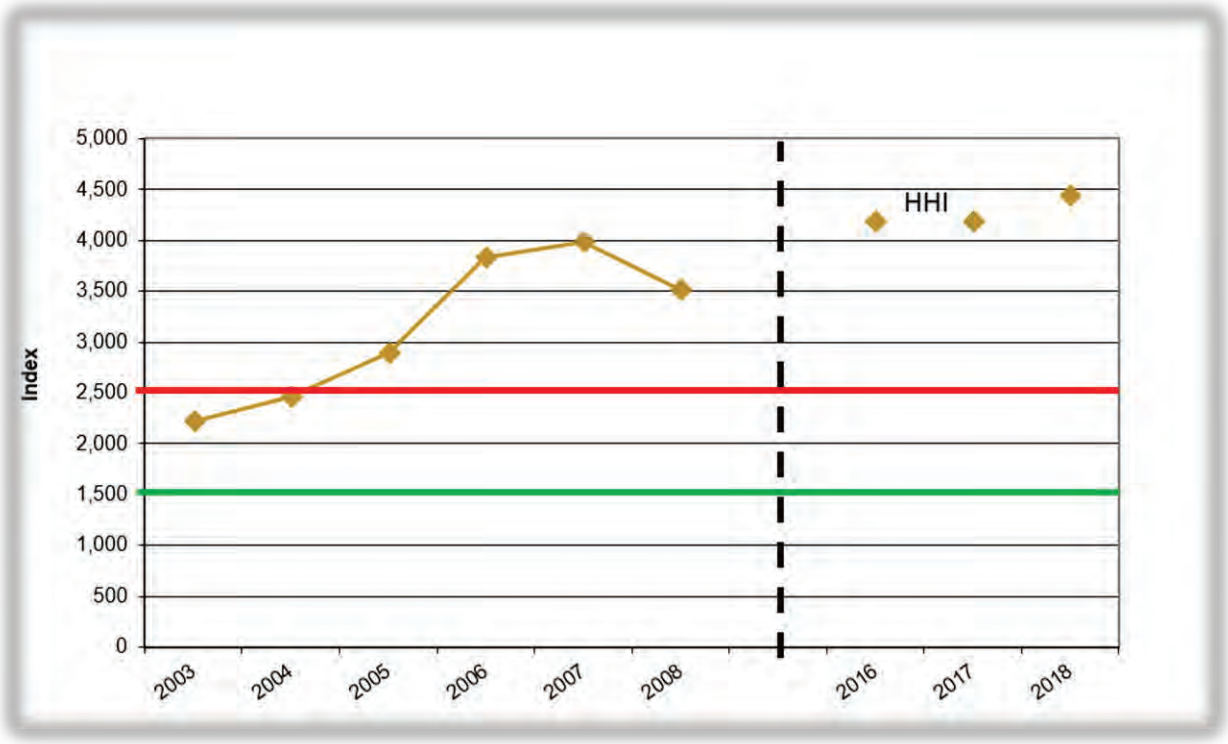


Figure 11. Herfindahl-Hirschman Index (HHI) of Market Concentration in Surfclam and Ocean Quahog Processing Sector (largely Vertically-Integrated), 2003-2008 (adapted from NMFS (2009)) and updated 2016-2018.

Note: HHI values below the green line (1,500) shows Unconcentrated Markets; HHI values between the green line (1,500) and red line (2,500) shows Moderately Concentrated Markets; HHI values above the red line (2,500) shows Highly Concentrated Markets.

Brief Discussion on Market Power and Impacts on Competition

The Atlantic surfclam and ocean quahog limited access privilege program (LAPP) allows for the legal transferability of the "ownership" privileges. The advantage of transferability is that it provides flexibility and incentives to shift harvesting to lower cost vessels, which improves overall profitability of the fishing fleet. Some people argue that transferability has the potential to disrupt existing industry structure and also allows for fishery participants to gain from the sale of

harvesting privileges rather than to use them to harvest fish. Since harvesting privileges are given away gratis on an annual basis individuals or firms given these privileges can profit merely by holding quota, rather than fishing.

While transferability of harvesting privileges offers many potential advantages, a concentration of ownership can lead to several different types of problems. This can include problems with market power in the final product market (monopoly; a single seller), the input market (monopsony; a single buyer) for the fishery resource, or the quota share market. These problems are not unique to fisheries under LAPPs and can occur in other sectors of the economy as well. An additional problem associated with excessive ownership is that it can lead to undesired changes in the structure of the fishing community broadly defined (NMFS 2007).

One of the most obvious market power issues is monopoly power (pricing power on the product market), that could result from accumulation of significant quota shares. The pursuit of monopoly profits will lead to artificial reduction in output in the final fishery resource (product market) or also in the quota share market and increase in prices to the consumer. However, in most instances the risk of this happening is fairly small because the product from any one LAPP must compete with similar products from domestic and international fisheries. Unless the LAPP is associated with a unique fishery product with a separate niche market, this is unlikely to become a problem (NMFS 2007). Furthermore, processors in the surfclam and ocean quahog fisheries report that in order to meet the schedules set by their customers (many of which are large consumer goods companies, such as Progresso or Campbell's, or large food service companies, such as Sysco and others), virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates.[39] Processors also indicate that these large sophisticated buyers are able to exert significant pricing power because of their large purchases and because they have the capability to substitute imported clams for domestic clams in their products if prices warrant.[40] The threat created by the ability of major customers to use other sources of clams has the potential to limit any efforts by processors to raise prices above competitive levels, and processors report feeling the effects of this pressure from their large customers (Mitchell et al. 2011). The Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power (monopoly) is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries.[41] It is possible that under some circumstances an excessive share cap of 100% may be appropriate for some fisheries. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011).

[39] Therefore, processors do not "post" a price that they are willing to pay for clams at unloading points. There is no "spot" market for surfclams or ocean quahogs (Mitchell et al. 2011).

[40] Imports of other clam species also provide a substitute for some uses (and a small portion of the domestic surfclam and ocean quahog harvest is exported). Processors report competition from imported clams from a number of countries, including Canada, Thailand, Chile, and others (Mitchell et al. 2011). Lastly, it is possible that clam meat competes with other proteins in some uses. Data are not available to rigorously evaluate whether other proteins, such as chicken or shrimp, compete with clam meat sufficiently that the prices of these substitute proteins substantially constrain the price of clam meat (Mitchell et al. 2011).

[41] The Compass Lexecon report did not analyse whether market power is exercised through the withholding of harvesting or processing, or through exclusionary conduct other than conduct involving quota ownership (Mitchell et al. 2011).

The CIE review of the Compass Lexecon report indicated that more attention should had been paid to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[42] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry and there with a small number of vessels and processors predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern than monopolization in the output market (Walden 2011).

An analysis was conducted by NMFS in 2009 to assess excessive share issues in the surfclam and ocean quahog ITQ fisheries. They found that while the ownership of ITQ quota share is mildly concentrated for surfclam ITQ quota share and unconcentrated for ocean quahog ITQ quota share, the use of quota is highly concentrated. The concentration of harvesting has risen substantially during the surfclam and ocean quahog ITQ program period largely as the result of the backward integration of processors into harvesting and the proliferation of long-term contracts among ITQ quota share owners, vessel owners, and processing firms.

As a result of this increase in vertical integration and in long-term contracts, processors now have direct or indirect control over the use of the majority of ITQ quota share in the surfclam and ocean quahog fisheries (NMFS 2009). NMFS examined the possibility that control over such a large amount of ITQ quota share is leading to lower prices paid to independent vessels for their harvest. A formal tests for oligopsony power (few buyers) by surfclam and ocean quahog processors was not done in the analysis conducted by the NMFS in 2009. They presented both landings and ex-vessel price trends, but not draw any conclusions about why these trends are occurring. However, the 2009 NMFS report indicated that over the past 40 years, net exit has occurred in both the harvest and processing sectors for a variety of reasons. For example, some of the major factors may have included:

> 1) declines in resource biomass of both species, particularly off southern states and in waters closer to shore;
> 2) declining catch rates for surfclams beginning in 2001;
> 3) lack of access to the surfclam and ocean quahog resources on Georges Bank due to PSP;
> 4) increasing costs of vessel operation, particularly fuel and insurance;
> 5) changing the federal fishery [fisheries] management program from effort-based regulations to individual transferable quotas. Decoupling harvest rights from vessels allowed unneeded vessels to exit the fishery [fisheries];
> 6) industry's shift to using larger vessels with greater capacity necessitates fewer of them;
>
> For the processing sector, factors that may have led to fewer firms include:
> 1) decreased resource availability (as with the vessel sector);
> 2) changing consumer tastes for clam products;
> 3) the high capital costs of modern clam plants;

[42] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

4) and perhaps most importantly, the high cost of equipment required to comply with stricter wastewater discharge regulations which resulted in many plants shutting down.

Taken together, these have led to the vertically integrated industry and the oligopsony market for surfclams and ocean quahogs which now exists according to the NMFS report.

Lastly, an additional type of problem that can result from concentration of ownership has to do with the lifestyle of fishing households and fishing communities. There could be significant philosophical support for the maintenance of a fishery composed of many diverse individuals. According to this opinion, even if concentration will not produce market power problems, it is something to be avoided for its own sake. However, this trade-off in economic returns from the fishery resource to maintain a social or community structure is a policy and prioritization question the Councils must sort through (NMFS 2007).

Total Allocations Being Fished

Table 14 shows surfclam and ocean quahog cage tag utilization by small and large allocation owners for the 2004-2006 and 2017 periods. In the ocean quahog fishery, the proportion of cage tags not used is higher for small allocation owners when compared to large allocation owners for the 2004-2006 and 2017 periods. In the surfclam fishery, the proportion of cage tags not used is higher for small allocation owners when compared to large allocation owners for all years except 2017. In 2017, the small allocation owners left 11% of their cage tags unharvested, while large allocation owners did not use 39% of their cage tags. However, a closer look at the surfclam allocation ownerships for 2017, indicated that a large number of small allocation owners may also be owners of large allocations via partnerships and other complex business practices that are prevalent in the fisheries. It is possible that some of the owners that have both, small and large surfclam allocations, may be harvesting the tags associated with their small allocations first before utilizing the tags associated with their larger allocations. For the years evaluated, the percentages of unused cage tags for small and large allocations owners tend to be relative closer to each other when larger proportions of the available quotas are harvested.

Table 14. Atlantic surfclam and ocean quahog allocation usage for 2004-2006 and 2017.

Year	Quota (million bushels)	Landings (million bushels)	% of quota unused	Total # allocations issued	Total # allocations that did not use any cage tags	Allocation owner by size*	% of total quota owned	# cage tags issued	# cage tags used	% cage tags unused
Surfclam										
2004	3.400	3.138	7.7%	84	2	Small Owners (43)	17.5%	18,641	17,068	8.4%
						Large Owners (41)	82.5%	87,614	80,821	7.8%
2005	3.400	2.744	19.3%	82	6	Small Owners (42)	18.2%	19,389	15,519	20.0%
						Large Owners (42)	81.8%	86,893	71,136	18.1%
2006	3.400	3.057	10.1%	82	7	Small Owners (41)	17.6%	18,731	13,381	28.6%
						Large Owners (40)	82.4%	87,551	81,347	7.1%
2017	3.400	2.186	35.7%	67	5	Small Owners (33)	11.7%	12,430	11,226	9.7%
						Large Owners (34)	88.3%	93,852	57,338	38.9%
Ocean Quahog										
2004	5.000	3.890	22.2%	56	9	Small Owners (28)	3.3%	5,146	3,172	38.4%
						Large Owners (28)	96.7%	150,887	116,887	22.5%
2005	5.333	3.006	43.6%	56	19	Small Owners (28)	3.3%	5,483	2,460	55.1%
						Large Owners (28)	96.7%	160,944	131,036	18.6%
2006	5.333	3.147	41.0%	56	23	Small Owners (28)	3.3%	5,483	2,253	58.9%
						Large Owners (28)	96.7%	160,944	94,231	41.5%
2017	5.333	3.149	40.9%	37	15	Small Owners (18)	4.0%	6,626	3,363	49.2%
						Large Owners (19)	96.0%	159,738	93,972	41.2%

*Allocations were considered to be "Small" or "Large" by sorting them from the smallest number of bushels to the largest, and then using the median to break them into two groups.

Landings, Quota Utilization, and Market Trends

Surfclams and ocean quahogs are processed into a variety of different products. Traditionally, surfclams' dominant use has been in the "strip market" to produce fried clams. In recent years (Mid-2000s on), however, they have increasingly been used in chopped or ground form for other products, such as high-quality soups and chowders (MAFMC 2010). Traditionally, the dominant use of ocean quahogs has been in products such as soups, chowders, and white sauces. Their small meat has a sharper taste and darker color than surfclams, which has not permitted their use in strip products or the higher-quality chowders products (MAFMC 2010).

The quotas and landings levels and the percent of quota landed from 1980-2017 for surfclams and ocean quahogs are shown in Figures 12 and 13, respectively. As previously indicated, the surfclam and ocean quahog ITQ system was implemented in 1990. For most years from 1990 to 2003, the surfclam harvest levels were near or at full quota level. However, for the last decade or so (2008-2017), surfclam production has been somewhat below the quota. Due to limited markets, surfclam landings have not reached the quota of 3.4 million bushels since it was set in 2004 (NEFSC 2017a). It should be noted that both changes in landings and the changes in quota levels affect the quota utilization shown in Figures 12 and 13. Surfclam landings in 2017, reached a record low at 2.2 million bushels, the lowest landings level since the ITQ system was implemented which also corresponds to the lowest quota utilization (percentage of quota landed). In the last fifteen years, a downward trend in landings of surfclams is observed (Figure 12).

On the other hand, ocean quahog linings have consistently been below the quota for most years since 1990. Industry utilization of ocean quahogs has varied across the years, influenced by market conditions and the costs of harvesting ocean quahogs. There was a shift toward greater utilization of quahog meats in 1997 and 1998. Both years saw almost all of the quota harvested, while surfclam quota was left unharvested. However, this trend reverted back to the historical norm in 1999 as fuel prices spiked, and it became relatively more expensive to harvest ocean quahogs which are found farther offshore. Higher fuel prices combined with the increasing scarcity of dense ocean quahog beds resulted in an overall decline in ocean quahog harvests (MAFMC 2010). During 2001-2004, there was again a brief increase in ocean quahogs landings, with 80% or more of the ocean quahog quota landed. In the last fifteen years (2003-2017), a downward trend in landings of ocean quahogs is observed (Figure 13). Ocean quahog landings in 2017, were 3.1 million bushels, which also corresponds to one of the lowest quota utilizations (percentage of quota landed) since the ITQ system was implemented in 1990. Due to limited markets, ocean quahog landings have not reached the quota of 5.3 million bushels since it was set in 2005 (NEFSC 2017b).

The reduction in landings for surfclams and ocean quahogs in the mid-2000s was due to several factors. Major users of clam meats reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace (MAFMC 2009, 2010, 2013). More recently, processors report that imported clams are available from a relatively large number of countries, including Canada, Thailand, Vietnam, China, and Chile (Mitchell et al. 2011). Surfclam and ocean quahog landings have been mainly constrained by market limitations.

Industry members have consistently asked the MAFMC to set the surfclam and ocean quahog quotas at levels lower than allowable catch limits. However, industry has also asked the Council to set the quotas for these two species at levels that are larger than the market demand since the mid-2000s.

In 2017, there were companies that reported purchases of surfclam and/or ocean quahog from the industrial fisheries outside of Maine. These 9 companies operated 15 different facilities located in various state. Some of these companies have facilities in multiple states (section 6.4.4). For the most part, processors aim to meet supply schedules set by their customers which are large consumer good companies, such as Progresso or Campbell's, or large food service companies, such as Sysco. This requires that most clams are harvested and processed to meet set schedules.

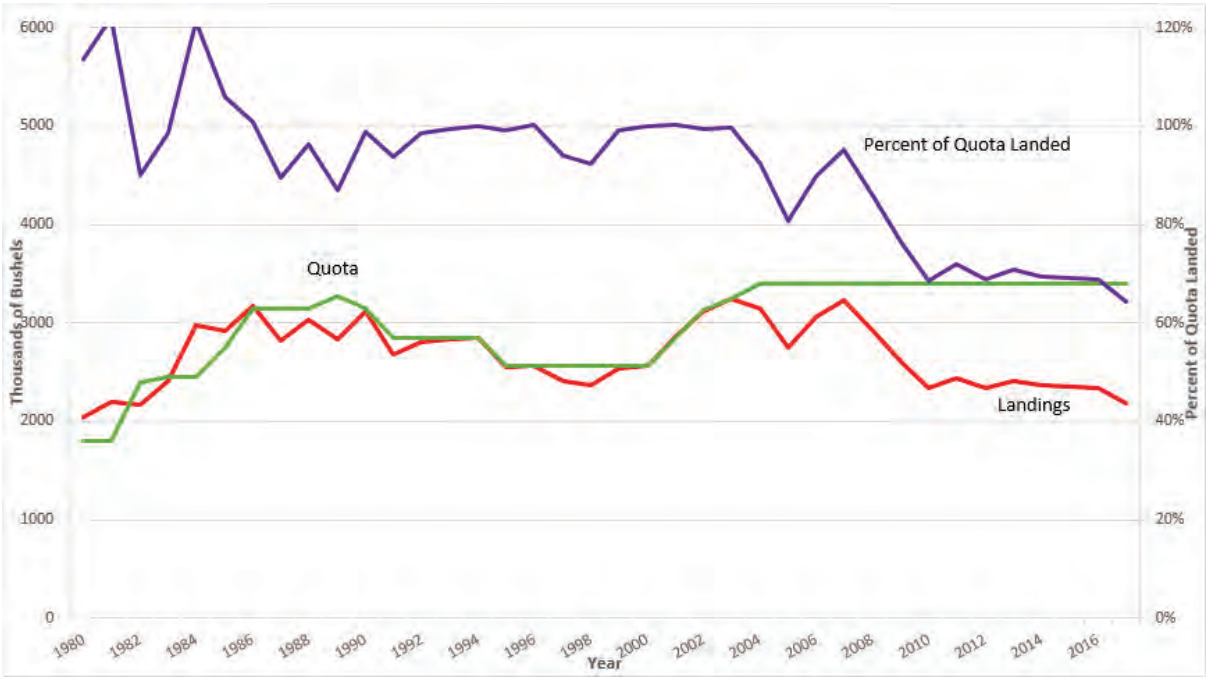


Figure 12. Surfclam landings, quota, and percent of quota landed, 1980-2017.
Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

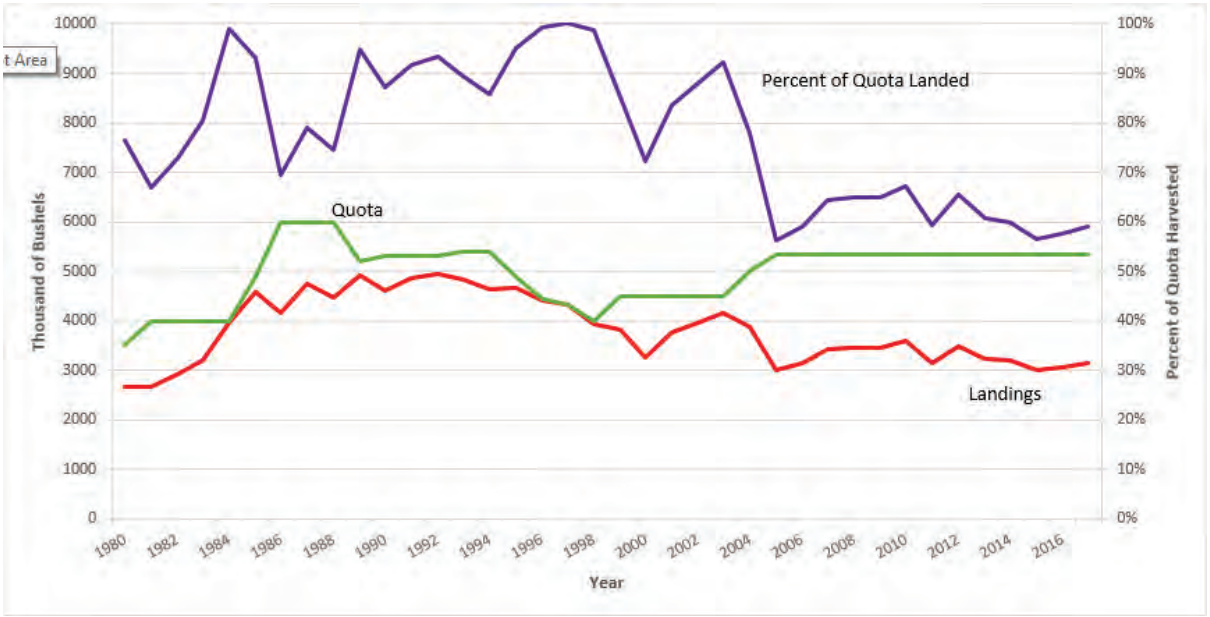


Figure 13. Ocean quahog landings, quota, and percent of quota landed, 1980-2017.
Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

Ex-vessel Revenues and Prices

Figures 14 to 17 show ex-vessel revenues and prices for surfclams and ocean quahogs in nominal and real values. As previously indicated (Trends in Consolidation Section), a series of conditions resulted in a substantial portion of the industrial fleet leaving the clam fishery that year. In addition, as previously mentioned, major users of clam meats had reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace. These conditions combined resulted in a large decrease in revenues for both species in 2005.The costs to vessels harvesting surfclams and ocean quahogs increased due to the rising costs of fuel and insurance (MAFMC 2009, 2010, 2013). However, nominal ex-vessel prices remained relative stable during that period (Figures 16 and 17).

After the large surfclam ex-vessel revenue decrease in 2005, ex-vessel revenues increased to the 2003 levels, and then have a decreasing trend through 2010 (Figure 14). From 2010 through 2017, surfclam ex-vessel revenues have shown a slight upward trend despite low quota utilization (Figure 12) and significant decrease in the efficiency of harvesting operations (Figure 18). Ex-vessel prices for surfclam have been relatively stable for the 2010 through 2017 period with slight increases (Figure 16).

Ex-vessel price for both species were relatively flat for the 2003 to 2007 period. In 2008, there was a slight increase in the price for both species that is likely related to the large increase in fuel costs in 2008, processors reported levying fuel surcharges on their customers for at least some period of time to cover increased harvesting costs. Ex-vessel price for both species show a steady upward trend from 2009-2017 (Figures 16 and 17).

However, Figures 16 and 17, show that the mean real price (adjusted prices) for both species have shown a downward trend for the 2003-2017 time period. While these trends by themselves yield no real answers about market power, taken together with increasing production prices, they do suggest that vessels were likely not improving their economic position.

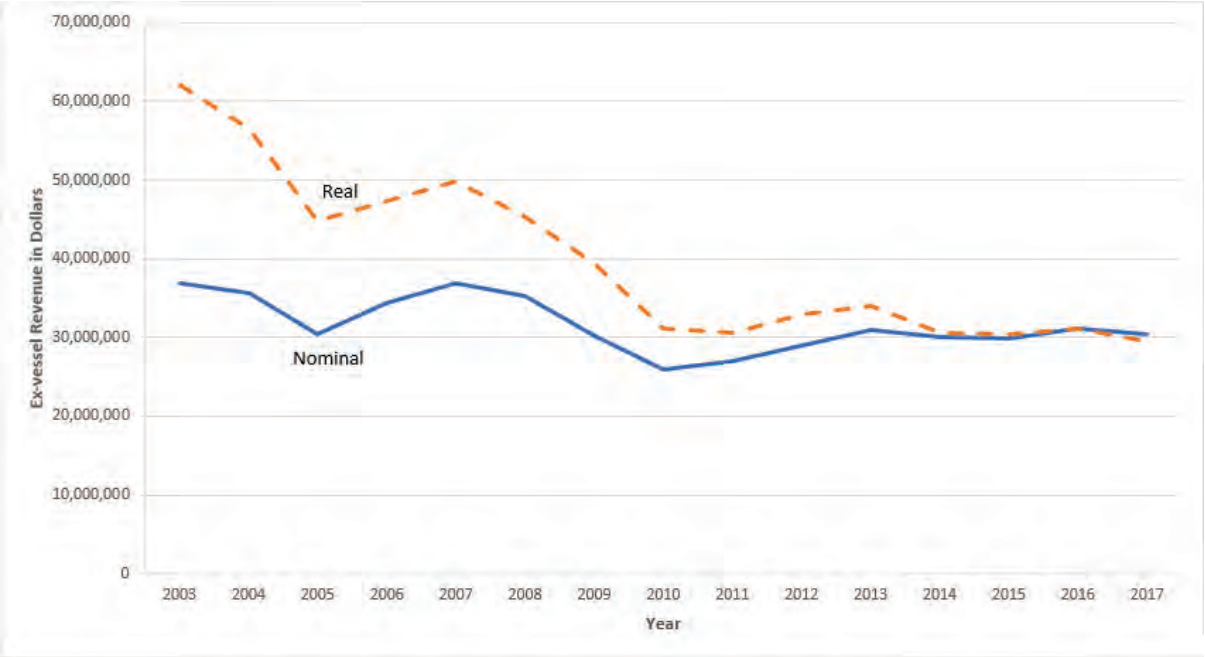


Figure 14. Surfclam ex-vessel revenue, 2003-2017.

Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars is for unprocessed and package fish, which includes shellfish and fish.

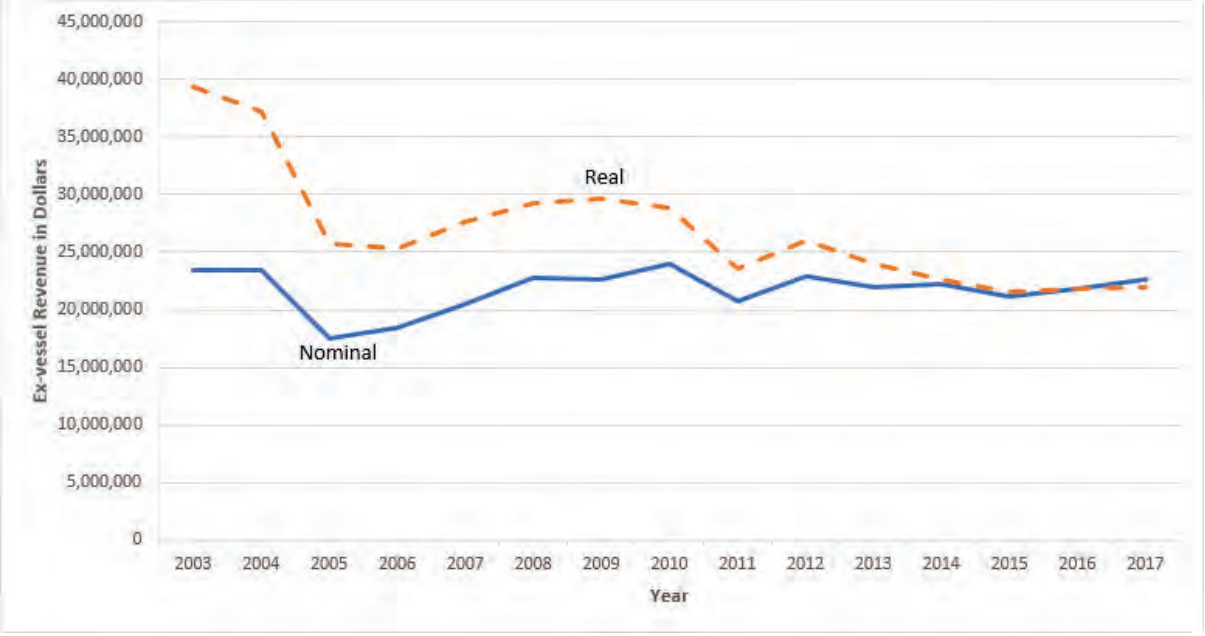


Figure 15. Ocean Quahog ex-vessel revenue, 2003-2017.

Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars is for unprocessed and package fish, which includes shellfish and fish.

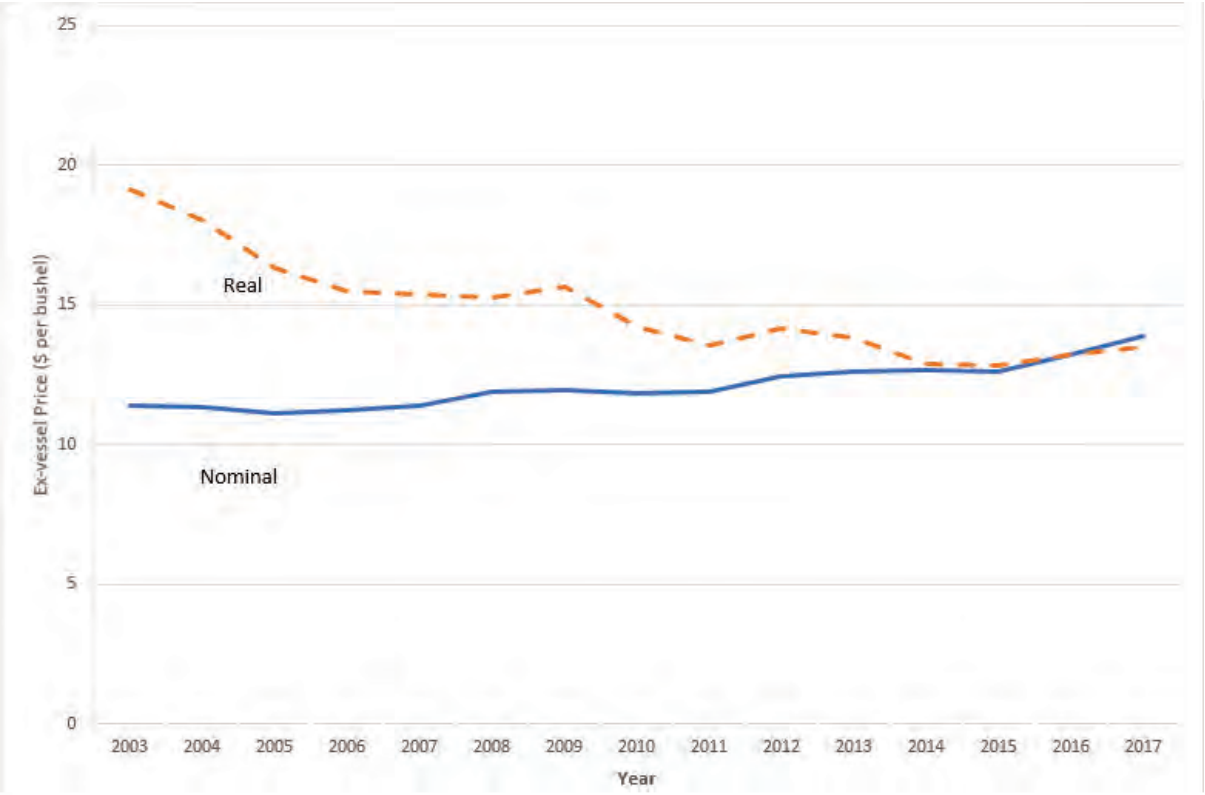


Figure 16. Surfclam ex-vessel price ($/bu), 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars is for unprocessed and package fish, which includes shellfish and fish.

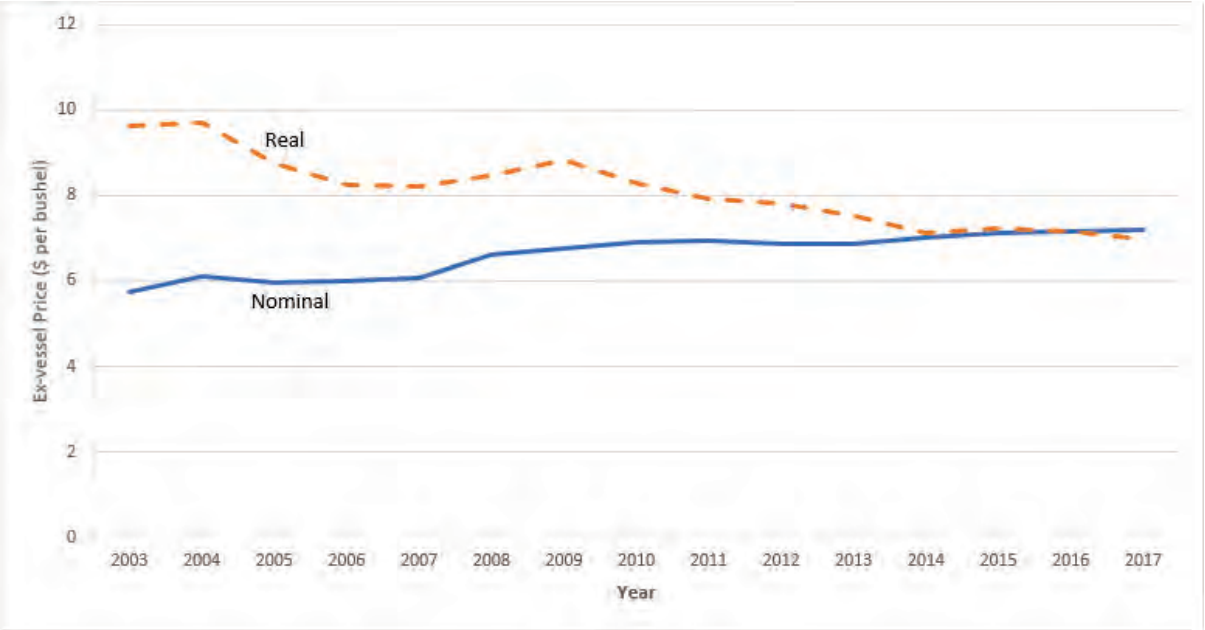


Figure 17. Ocean quahog ex-vessel price ($/bu), 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars is for unprocessed and package fish, which includes shellfish and fish.

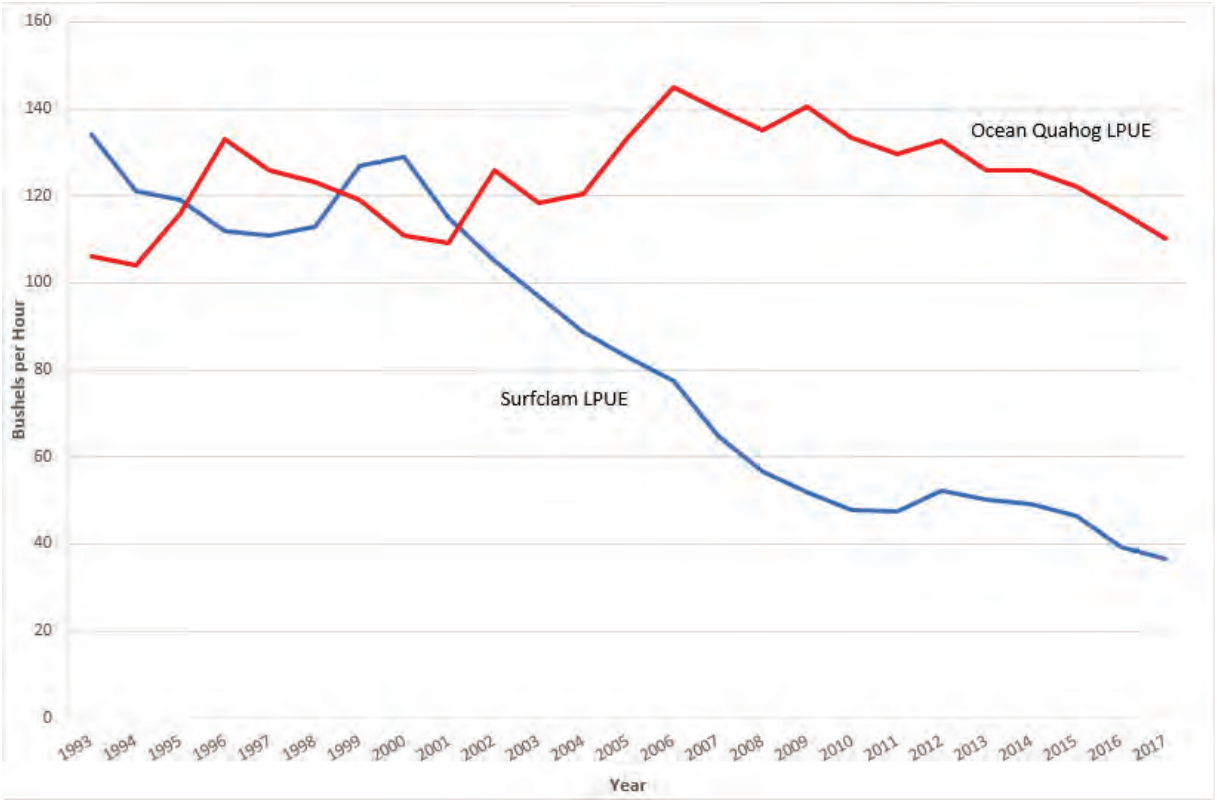


Figure 18. Surfclam and ocean quahog landings per unit effort (LPUE), 1993-2017.
Source: NMFS Clam Vessel Logbook Reports.

Economic Performance - Harvesting Sector

Prior to the implementation of the Atlantic surfclam and ocean quahog ITQ program, excess harvesting capacity (overcapitalization) was a major problem and led to closures very quickly due to effort restrictions. In fact, the excess capacity was such, that it was believed that an increase in the annual quota within the range that at that time constituted optimum yield would have not alleviated this problem but could have further encouraged the existing vessels to increase vessel capacity through gear modifications (MAFMC 1988).

Given the large economic inefficiencies resulting from the overcapitalization of the fleet, the harvesting and processing industries which depend upon them were only marginally profitable. Furthermore, during the pre-ITQ period, the composition of the entire fleet shifted to larger vessels (MAFMC 1988). Larger vessels harvest more output per unit of input (on site). However, under management measure that constrained the time (e.g., effort restrictions) that vessels could fish for surfclams, both, small and large vessels harvested similar quantities of surfclams. As such, overall, larger vessels employed more fuel, labor, and capital services per unit of output when compared to smaller vessels. The benefit of larger unit output per unit of allocated inputs once the vessel has reached a fishing site were not realized under effort time restrictions (Weninger and Strand 2003).

In theory, an important benefit of ITQ systems are efficiency gains that may result from the implementation of property rights. Walden et al. (2012) pointed out that under an ITQ system, vessels with the lowest harvesting costs can expand their catch by buying or leasing quota share

from other, higher-cost vessels, leading to lower overall harvest costs and more efficient outcomes for society.

Theoretically, under the ITQ system, each harvester is able to use the least cost combination of fishing inputs (e.g., fuel, labor, materials) since they allocated an exclusive share of the annual catch limit. In other words, they are incentivized to harvest the resource in a manner that is least costly to them, and therefore, maximizing profits for their fishing operations as well as the industry as a whole.

Productivity is a key economic indicator at the household, firm, industry and national levels, and is a critical factor in economic growth (Färe, Grosskopf, and Margaritis 2008 cited in (Walden et al. 2014)). A productivity index can be used to measure the combined effects of changes in inputs and outputs in a fishery. More specifically, a productivity index can be used to describe how landings from fishing vessels and input to produce those landings change through time. This indicator is of importance, because changes in productivity are directly tied to changes in profit. As an example, if prices for the clams landed are stable, and the inputs (such as fuel used on a fishing trip) do not change, profits can increase if vessels are able to produce more landings (outputs) for a given level of inputs.

Productivity changes in the Atlantic surfclam and ocean quahog ITQ fisheries have been conducted by various researchers. Walden et al. (2014) conducted an evaluation of productivity change for all catch share fishery programs in the U.S. and Thunberg et al. (2015) measured changes in multi-factor productivity in U.S catch share fisheries. Multi-factor productivity (MFP) change is a measure of changes in quantities of inputs used to harvest fish and outputs produced. Changes in the MFP can be used to capture multiple dimensions of economic change associated with catch share programs (e.g., changes in product value and mix, costs and efficiency) in a single metric through time.

MFP may improve either by harvesting more fish with the same amount of inputs or by harvesting the same amount of fish using fewer inputs. It is expected that by ending the "race to fish" catch share programs may lead to improved productivity through the ability to better plan harvesting activities to change the mix of outputs and/or make better use of capital and other inputs. Furthermore, productivity gains may also be obtained through the transfer of quota from less to more efficient vessels (Walden et al. 2012).

Since changing resource conditions can influence output, the values reported by Walden et al. (2014) and Thunberg et al. (2015) were adjusted using a Lowe index to account for changes in biomass to estimate MFP. For a detailed treatment of methods and data see Walden et al. (2014) and Thunberg et al. (2015).

Walden et al. (2014) concluded that over the long-term, the biomass adjusted MFP (MFP is defined as a ratio of aggregate outputs to aggregate inputs) has remained above the pre-ITQ period baseline (1987-1989) in the surfclam fishery from 1990 through 2012 (the last year evaluated in the analysis). On a yearly basis, the biomass-adjusted productivity increased until 2003, then declined during the last eight years of the time period (Figure 19). Beginning in year 2000, the input index started to increase, indicating that more inputs were being used to harvest the quota. This outcome

is consistent with a declining biomass. When the stock declines and becomes more dispersed spatially, vessels will need to employ more inputs to harvest the same amount of output.

For ocean quahogs, the adjusted multi-factor productivity was above the pre-ITQ baseline for 19 of 23 years (Walden et al. 2014). The value of 1.82 in year 2012 indicates that the fishery was 82% more productive in 2012 than in the base line period. Most of the years showed slight increases or decreases in yearly productivity (Figure 19). The largest increase was in 21% in 2005 (1.21), while the largest decline was 13% in 2000 (0.87). For the entire period, the average year-to-years change was there percent (1.03).

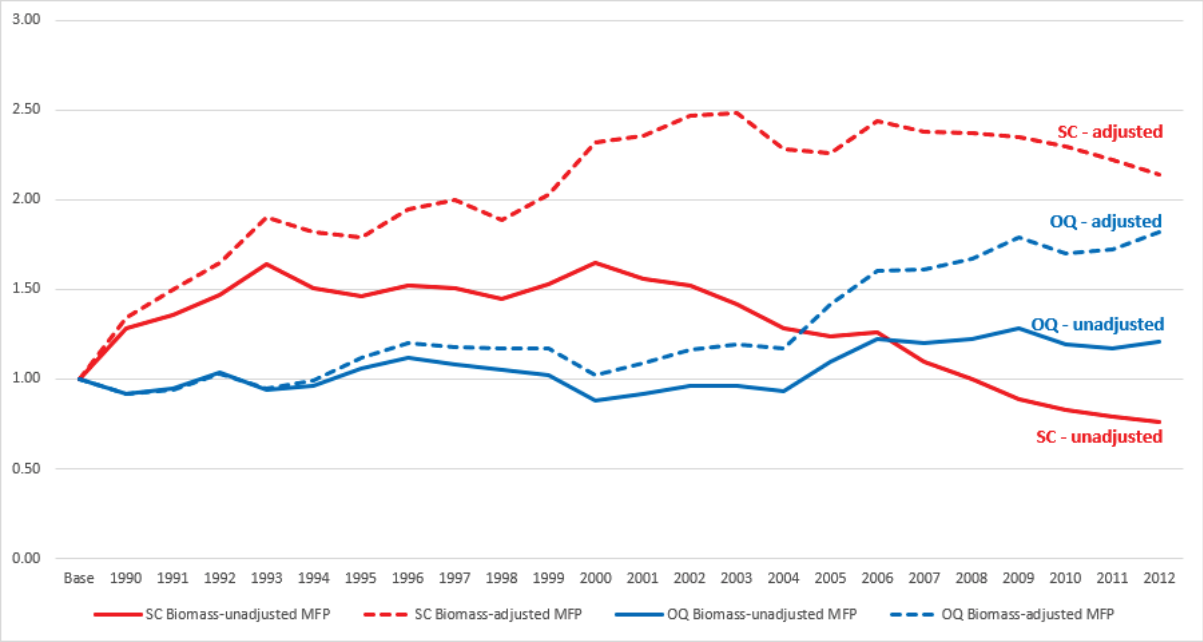


Figure 19. Biomass-unadjusted and biomass-adjusted marginal factor productivity for surfclam and ocean quahog, base period (1997-1989) to 2012.

Brinson and Thunberg (2016) employed the Gini coefficient to measure changes in the distribution of the use of quota in terms of catch share revenue among active vessels for several catch share programs. These authors indicated that the trends in the Gini coefficient over time and not the absolute value are important in assessing evenness or equality. A Gini coefficient of 0 means that catch share revenues are the same for all active vessels, while a value approaching 1 means that catch shares revenues are highly concentrated in a single or among a small number of vessels. A decreasing Gini coefficient is indicative of increasing evenness or equality in catch share revenues, whereas an increasing Gini coefficient indicates decreasing evenness, or its opposite increasing inequality among participating vessels.

The Gini coefficient for surfclam during the first year of the ITQ program implementation was 0.37 (1990), a 16% increase from the 1987-1990 baseline period (0.32). The Gini coefficient has been steadily increasing since the surfclam ITQ system was implemented and reached a value of 0.50 in 2013 (the last year evaluated by the authors). For ocean quahogs, the Gini coefficient was 0.51 during the baseline period and it decreased to 0.48 during the first year of the ITQ program implementation, and then steadily increased to 0.61 for most of the early 1990s to early 2000s. In

2013, the Gini coefficient for the ocean quahog fishery was 0.59 (Table 15). The overall performance analysis (assessing set of all indicators developed) for 16 catch share programs evaluated by Brinson and Thunberg (2016) indicated that in general terms the accumulation of ownership share may be less of a concern than consolidation in the use of quota, which includes the use of quota by entities as well any quota lease from other share owners.

Table 15. The Gini coefficient for the surfclam and ocean quahog catch share programs.

Catch Share Program	Baseline period (average 1987-1989)	Year 1	Average years 1-3	Average years 1-5	Last 5 year average	2013
Surfclam	0.32	0.37	0.45	0.46	0.49	0.50
Ocean Quahog	0.51	0.48	0.61	0.61	0.61	0.59

Source: Brinson and Thunberg (2016).

ITQ Program Review

The Council contracted Northern Economics, Inc. to conduct a review of the Atlantic surfclam and ocean quahog ITQ program. NOAA Catch Share Policy prepared in 2010 indicates that periodic reviews are expected of all catch share programs (CSPs), regardless of whether the program is a LAPP or when it was put in place. The review being conducted by Northern Economics, Inc. will fulfill the program review requirements as described in the guidance for catch share reviews (NMFS 2017b). The program review is expected to be completed in Spring 2019.

7.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This Environmental Assessment (EA) analyzes the expected impacts of each alternative on each VEC. When considering impacts on each VEC, the alternatives are compared to the current condition of the VEC. The alternatives are also compared to each other. The No Action alternatives describe what would happen if no action were taken. For all options considered in this document, the "no action" alternative would have the same outcomes as *status quo* management, therefore, these alternatives are at times described as "no action/*status quo*."

Environmental impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). Table 16 summarizes the guidelines used for each VEC to determine the magnitude and direction of the impacts described in this section.

The recent conditions of the VECs include the biological conditions of the target stocks, non-target stocks, and protected species over the most recent five years (sections 6.1 and 6.3). They also include the fishing practices and levels of effort and landings in the surfclam and ocean quahog fisheries over the most recent five years, as well as the economic characteristics of the fisheries over the most recent three to five years (depending on the dataset; section 6.4). The recent conditions of the VECs also include recent levels of habitat availability and quality (section 6.2). The current condition of each VEC is described in Table 17.

This EA analyzes the impacts of the alternatives described fully under section 5.0. For ease reference, those alternatives are listed here.

Excessive Share Alternatives

- Alternative 1: No Action/*Status Quo* (No limit or definition of an excessive share is included in the FMP)
- Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)
  - Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 2.2: Quota share cap at 49%
  - Sub-Alternative 2.3: Quota share cap at 95%
- Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)
  - Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 3.2: Combined cap at 40%
  - Sub-Alternative 3.3: Combined cap at 49%
- Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)
  - Sub-Alternative 4.1: Two-part cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017 plus 15% added to the maximum levels to allow for additional consolidation
  - Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%

- Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota
- Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Excessive Shares Review Alternatives

- Alternative 1: No Action/*Status Quo* (There are no requirements for review of any implemented excessive shares measures)
- Alternative 2: Require periodic review of any excessive shares measures that the Council adopts at specific intervals. At least every 10 years or as needed

Framework Adjustment Process

- Alternative 1: No Action/*Status Quo* (No changes to the current list of measures that can be addressed under the framework adjustment process)
- Alternative 2: Add modification of the excessive share cap levels to the list of measures to be adjusted via framework

Multi-Year Management Measures

- Alternative 1: No Action/*Status Quo* (No changes to the process to set surfclam and ocean quahog management specifications for up to 3 years)
- Alternative 2: Allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule

The alternatives are not compared to a theoretical condition where the fisheries are not operating. These fisheries have occurred for many decades and are expected to continue into the foreseeable future. The nature and extent of the management programs for these fisheries have been examined in detail in EAs and Environmental Impact Statements (EISs) prepared for previously implemented management actions under the Atlantic Surfclam and Ocean Quahog FMP.

When considering overall impacts on each VEC, both surfclam and ocean quahog commercial fisheries are considered. This action does not propose any modifications to other management components (e.g., annual quota, minimum size, reporting requirements) and as such are not expected to affect the commercial fisheries in a manner that would change the impacts for any of the VECs considered.

In general, alternatives which may result in overfishing or an overfished status for target and non-target species may have negative biological impacts for those species, compared to the current condition of the VEC. Conversely, alternatives which may result in a decrease in fishing effort, resulting in ending overfishing or rebuilding to the biomass target, may result in positive impacts for those species by resulting in a decrease in fishing mortality (Table 16).

For the physical environment and habitat, alternatives that improve the quality or quantity of habitat or allow for recovery are expected to have positive impacts. Alternatives that degrade the quality or quantity, or increase disturbance of habitat are expected to have negative impacts (Table 16). In addition, alternatives that result in continued fishing effort may limit the recovery potential of some currently degraded areas and therefore result in slight negative impacts. The commercial

fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. The effects of clam dredges are short term and minimal because the fisheries occur in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats (section 6.2.3). Even in areas where habitat may be impacted by commercial gear or vessels, these areas are typically commonly fished by many vessels over many decades and are unlikely to see a measurable improvement in their condition in response to minor changes in measures or short-term changes in effort in an individual commercial fishery.

For protected species, consideration is given to both ESA-listed species and MMPA-protected species. ESA-listed species include populations of fish, marine mammals, or turtles at risk of extinction (endangered) or endangerment (threatened). For endangered or threatened species, any action that results in interactions with or take of those species or stocks is expected to have negative impacts, including actions that reduce interactions. Actions expected to result in positive impacts on ESA-listed species include only those that contain specific measures to ensure no interactions with protected species (i.e., no take). By definition, all species listed under the ESA are in poor condition and any take has the potential to negatively impact that species' recovery.

Under the MMPA, the stock condition of each protected species varies, but all are in need of protection. For marine mammal stocks/species that have their PBR level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 16). The impacts of each alternative on the protected resources VEC take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have exceeded or are in danger of exceeding their PBR level.

Socioeconomic impacts are considered in relation to potential changes in landings and prices, and by extension, revenues, compared the current fisheries conditions. Alternatives which could result in an increase in landings are generally considered to have positive socioeconomic impacts because they could result in increased revenues; however, if an increase in landings leads to a decrease in price or a decrease in SSB for any of the landed species, then negative socioeconomic impacts could occur. Lastly, measures that would curtail entities from exerting market power and therefore not decreasing competition would have positive socioeconomic impacts. In addition, measures that would result in community disruptions as result of additional consolidation (e.g., decrease in the number of independent harvesters, decrease in employment) would have negative socioeconomic impacts.

Expected Changes in Fishing Effort Under Alternatives Considered

The expected impacts to each VEC are derived from both consideration of the current condition of the VEC and the expected changes in fishing effort under each of the alternatives. It is not possible to quantify with confidence how effort will change under each alternative; therefore, expected changes are typically described qualitatively. However, the excessive shares alternatives

presented in this document or the other alternatives analyzed (i.e., cap review; framework adjustment process; and multi-year management measures) are purely administrative and are not expected to have any impact on fishing methods and practices and are not expected to result in changes in fishing effort or redistribution in fishing effort. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted.

Table 16. General definitions for impacts and qualifiers relative to resource condition (i.e., baselines) summarized in Table 17 below.

General Definitions				
VEC	**Resource Condition**	**Impact of Action**		
		Positive (+)	Negative (-)	No Impact (0)
Target and non-target Species	Overfished status defined by the MSA	Alternatives that maintain or are projected to result in a stock status above an overfished condition*	Alternatives that maintain or are projected to result in a stock status below an overfished condition*	Alternatives that do not impact stock / populations
ESA-listed protected species (endangered or threatened)	Populations at risk of extinction (endangered) or endangerment (threatened)	Alternatives that contain specific measures to ensure no interactions with protected species (i.e., no take)	Alternatives that result in interactions/take of listed species, including actions that reduce interactions	Alternatives that do not impact ESA-listed species
MMPA protected species (not also ESA-listed)	Stock health may vary but populations remain impacted	Alternatives that maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammals that could result in takes above PBR	Alternatives that do not impact MMPA protected species
Physical environment / habitat / EFH	Many habitats degraded from historical effort and slow recovery time (see condition of the resources table)	Alternatives that improve the quality or quantity of habitat or allow for recovery	Alternatives that degrade the quality/quantity or increase disturbance of habitat	Alternatives that do not impact habitat quality
Human communities (socioeconomic)	Highly variable but generally stable in recent years (see condition of the resources table for details)	Alternatives that increase revenue and social well-being of fishermen and/or communities	Alternatives that decrease revenue and social well-being of fishermen and/or communities	Alternatives that do not impact revenue and social well-being of fishermen and/or communities
Impact Qualifiers				
A range of impact qualifiers is used to indicate any existing uncertainty	Negligible	To such a small degree to be indistinguishable from no impact		
	Slight (sl), as in slight positive or slight negative	To a lesser degree / minor		
	Moderate (M) positive or negative	To an average degree (i.e., more than "slight", but not "high")		
	High (H), as in high positive or high negative	To a substantial degree (not significant unless stated)		
	Significant (in the case of an EIS)	Affecting the resource condition to a great degree, see 40 CFR §1508.27.		
	Likely	Some degree of uncertainty associated with the impact		
*Actions that will substantially increase or decrease stock size, but do not change a stock status may have different impacts depending on the particular action and stock. Meaningful differences between alternatives may be illustrated by using another resource attribute aside from the MSA status, but this must be justified within the impact analysis.				

Table 17. Baseline conditions of VECs considered in this action, as summarized in section 6.

VEC		Baseline Condition	
		Status/Trends, Overfishing?	**Status/Trends, Overfished?**
Target stocks (section 6.1.1)	**Atlantic surfclam**	No	No
	Ocean quahog	No	No
Non-target species (principal species listed in section 6.1.2)	**Moon snail**	Unassessed	Unassessed
	Sea scallop	No	No
	Little skate	No	No
	Winter skate	No	No
Habitat (section 6.2)		Commercial fishing impacts are complex and variable and typically adverse; Non-fishing activities had historically negative but site-specific effects on habitat quality.	
Protected resources (section 6.3)	**Sea turtles**	Leatherback and Kemp's ridley sea turtles are classified as endangered under the ESA; loggerhead (NW Atlantic DPS) and green (North Atlantic DPS) sea turtles are classified as threatened.	
	Fish	Atlantic salmon, shortnose sturgeon, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are classified as endangered under the ESA; the Atlantic sturgeon Gulf of Maine DPS is listed as threatened; cusk, alewife, and blueback herring are candidate species	
	Large whales	All large whales in the Northwest Atlantic are protected under the MMPA. North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. Pursuant to section 118 of the MMPA, the Large Whale Take Reduction Plan was implemented to reduce humpback, North Atlantic right, and fin whale entanglement in vertical lines associated with fixed fishing gear (sink gillnet and trap/pot) and sinking groundlines.	
	Small cetaceans	Pilot whales, dolphins, and harbor porpoise are all protected under the MMPA. Pursuant to section 118 of the MMPA, the Harbor Porpoise Take Reduction Plan and Bottlenose Take Reduction Plan was implemented to reduce bycatch of harbor porpoise and bottlenose dolphin stocks, respectively, in gillnet gear.	
	Pinnipeds	Gray, harbor, hooded, and harp seals are protected under the MMPA.	
Human communities (section 6.4)		Surfclam and ocean quahog stocks support substantial industrial fisheries and related support services. 2017 estimated ex-vessel revenues were $31 and $23 million for surfclams and ocean quahogs respectively. In 2017, there were 67 surfclam and 37 ocean quahog allocations owners at the beginning of the fishing year. A total of 48 vessels were active in these fisheries in 2017.	

7.1 Impacts on Atlantic Surfclam and Ocean Quahog (Managed Species) and Non-Target Species

Excessive Shares Alternatives

Under alternative 1 (no action), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. This alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0). The no action alternative is expected to have no impact on the prosecution of these clam fisheries, including landings levels, fishery distribution, or fishing methods and practices. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species). Alternative 1 is expected to have the same impacts (no impacts) on target species as alternatives 2-6 described below.

The no action alternative is not expected to impact non-target species caught in the surfclam and ocean quahog commercial fisheries. All of the species most commonly caught on directed clam trips have positive stock status, except for moon snails which are unassessed. As indicated above, the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices are not expected to change under this alternative. Therefore, the no action alternative is expected to have no impact on interaction of these fisheries with non-targeted species. Alternative 1 is expected to have the same impacts (no impacts) on non-target species as alternatives 2-6 described below.

Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. These alternatives are expected to have no impact on the prosecution of these surfclam and ocean quahog fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Alternatives 2-6 are expected to have no impacts (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Relative to each other, and alternative 1 (no action), alternatives 2-6 would have no impacts on both target species, and non-target species.

Excessive Shares Review Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species

caught in the surfclam and ocean quahog commercial fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

Framework Adjustment Process Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action), the list of management measures that have been identified in the FMP that could be addressed via framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive share cap level to the list of frameworkable actions in the FMP. This frameworkable item would provide means to make modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to select cap). Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

Multi-Year Management Measures Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Alternative 2 would allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fisheries resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first

quarter of each year during the multi-year specifications period to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

Although there are no impacts on the VECs, alternative 2 would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process).

7.2 Impacts on the Physical Habitat and EFH

As described in section 7.0, the commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. The effects of clam dredges are short term and minimal because the fisheries occur in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats. As described in section 7.1, the alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Excessive Shares Alternatives

Under alternative 1 (no action), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts (no impacts) on habitat, including EFH as alternatives 2-6 described below.

Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. Alternatives 2-6 are expected to have no impacts (direct or indirect) on habitat, including EFH. Relative to each other, and alternative 1 (no action), alternatives 2-6 would have no impacts on habitat, including EFH.

Excessive Shares Review Alternatives

Under alternative 1 (no action), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

Framework Adjustment Process Alternatives

Under alternative 1 (no action), the list of management measures that have been identified in the FMP that could be addressed via the framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive share cap level to the list of frameworkable actions in the FMP. This frameworkable item would provide means to make modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to select cap). Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

Multi-Year Management Measures Alternatives

Under alternative 1 (no action), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Alternative 2 would allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year during the multi-year specifications period to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.3 Impacts on Protected Resources

Excessive Shares Alternatives

Under alternative 1 (no action), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue and therefore, the no action alternative is expected to have no impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Based on this information, and the fact that

there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the fisheries, Alternative 1 is not expected to adversely affect any protected species provided in Table 11 (see section 6.3). For these reasons, the no action alternative is expected to have no impact on ESA-listed and/or MMPA-protected resources. Relative to alternatives 2-6, alternative 1 would have no impacts to protected species.

In addition, as described in section 7.1, the actions considered under alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. These alternatives are expected to have no impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Based on this information, and the fact that there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the fisheries, alternatives 2-6 are not expected to adversely affect any protected species provided in Table 11 (see section 6.3). For these reasons, alternatives 2-6 are expected to have no impacts (direct or indirect) on ESA-listed and/or MMPA-protected resources. Relative to each other, and alternative 1, alternatives 2-6 would have no impacts on protected species.

Excessive Shares Review Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations of the excessive shares review alternatives on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

Framework Adjustment Process Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices.

The impact determinations of the framework adjustment process alternatives on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action), the list of management measures that have been identified in the FMP that could be addressed via the framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of management measures that have been identified in the FMP that can be implemented or adjusted at any time during the year. This alternative would add adjustments to the excessive share cap level to the list of frameworkable actions in the FMP. This frameworkable item would provide means to make modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to select cap). Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

Multi-Year Management Measures Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action), the current management approach addressing surfclam and ocean quahog multi-year management specifications would continue. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Alternative 2 would allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year during the multi-year specifications period to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources.

Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.4 Impacts to Communities (Socioeconomic Impacts)

Excessive Shares Alternatives

Under alternative 1 (no action), no limit or definition of excessive shares accumulation is included in the FMP. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. Under this alternative, the current management approach to address excessive shares would continue.

Amendment 8 to the FMP states that it relies on antitrust laws already in force which would cover the abuse of excessive shares (MAFMC 1988). The Council's intent under Amendment 8 was to have NMFS monitor the concentration of ITQ (as ITQ owners have to apply to NMFS to transfer ITQ) and if it seemed that excessive consolidation was occurring, they would advise the U.S. Department of Justice (DOJ) which would determine if antitrust laws were being violated. However, this monitoring of quota shares could not occur. This is because the creation of new business entities (e.g., LLC's, etc.) with ITQ ownership, and the lack of a regulatory mechanism to identify corporate officers or business partnerships across individuals or entities involved in ITQ ownership hampered the ability to determine whether there was a concentration of quota ownership, and whether competitive conditions were being eroded in the quota share market over time.

During the development of alternatives for this amendment, staff at the Council and GARFO (including General Council) spoke to the Antitrust Division of the DOJ about the role that they might play in the monitoring of excessive shares in the Atlantic surfclam and ocean quahog fisheries. The DOJ indicated that their Business Practice Process does provide a pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process[43] has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment.[44]

Therefore, this alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0), and a means to track and monitor ownership relative to that definition is needed.

As previously described in section 6.4.5, the Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries. The qualitative evidence reviewed in the Compass Lexecon Report indicates that is unlikely that market power is being exerted in the product market (monopoly) in these fisheries.

[43] For a detailed description of the Business Review process of the DOJ see: https://www.justice.gov/
[44] Sarah Heil, letter to Chis Moore, PhD, June 1, 2018.

In addition, it is argued that the availability of substitutes is the most important of the factors listed in determining the elasticity of demand[45] for a specific commodity (Leftwich 1973; Awk 1988). Seafood demand in general appears to be elastic (NMFS 2007). In fact, for most species, product groups, and product forms, demand is elastic (Asche and Bjørndal 2003). There are many substitutes for most fish products, including other types of fish and sources of protein from other animals (NMFS 2007). When demand is highly elastic, and substitutes are amply available, small changes in price lead to large changes in the quantity demanded. The large reductions in output caused by price increases generally limit the potential for the significant exercise of market power (because moving the market price substantially requires withholding, without revenue, a large quantity).

While current levels of share consolidation do not appear to result in market power in the product market (monopoly), it could create market power in the input market (monopsony) for the fishery resource, or the quota share market. In fact, the CIE review of the Compass Lexecon Report indicated that more attention should be paid to the *monopsony* problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[46] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry with a small number processors and vessels predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern that monopolization in the output market (Walden 2011).

Monopsony power could be exercised by processors over harvesters by reducing their demand for harvesting services, lowering the market price of harvesting services and increasing profits to the processing sector. However, if a processor owns a harvester, that firm would not benefit by underutilizing its own harvesting assets in order to depress the price of harvesting services. The processor will be motivated to use its own harvesting capacity when the incremental value of the harvest to the processor exceeds the incremental cost of harvesting, without regard for the effect of the additional harvesting on the market price of harvesting services. As a result, vertically integrated processors will increase harvest levels over those non-vertically integrated processors would choose were they to have influence over the market price of harvesting services (Mitchell et al. 2011). Lastly, from a social perspective, concentration of ownership and control could affect the social and community structure and participation in these fisheries. For example, from a social perspective, it is possible that under additional vertical integration the number of vessels participating in the fisheries could decerase further. Vertically integrated companies could choose to retire older less efficient vessels (for larger, newer, more efficient ones). In addition, there could be further departure of the few independent harvesters still participating in the fisheries. Vertical integration allows individual processors to exert control from the time a clam is harvested from the sea bed to the sale and transport of the final clam products from their facilities.

[45] Price elasticity of demand is a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price when nothing but the price changes.

[46] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

The no action alternative is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, under alternative 1, there would be no limit or definition of excessive shares accumulation included in the FMP. As such, it could potentially lead to one entity holding 100% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Alternative 1 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions. Alternative 1 could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.

Under alternative 2, a single cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags)[47] throughout the year.[48] Because alternative 2 is based on ownership-only values, none of the sub-alternatives discussed below account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

Under Sub-Alternative 2.1, the single quota share caps would be based on the highest level of quota share held by any individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period.[49] The single caps under this alternative would depend on the determination of ownership quota shares levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

The highest level of quota share held (owned) by any individual or entity for surfclam was 28% under both the net actual percentage model and cumulative percentage model regardless of affiliation levels analyzed (Table 2). For example, when you consider results for the cumulative 100% model at the individual/business affiliation level, the highest level of quota share held by a single individual/business was 28% in each 2016 and 2017. This means that a single individual or business held (owned) 28% of the total surfclam ITQ allocation for the 2016-2017 period. This level of ownership does not change when the family level affiliation is considered because that individual/business with the highest holdings did not report family members holding additional allocations. Similarly, the 28% quota share value did not change when the corporate officer level affiliation was considered, as that individual/business did not report any officer(s) in their company that have other interests in other companies that also hold surfclam quota shares. However, those levels do vary across affiliation levels for other individual entities that occur below the cap. Only maximum values are shown in that Table 2. The highest level of quota share held (owned) by any

[47] There would be no limit of how much annual allocation (cage tags) an individual or entity could use or transfer during the fishing year.
[48] All excessive share alternatives are applicable throughout the year.
[49] On average, for the 2016-2017 period, 67% of the surfclam quota and 58% of the ocean quahog quota were landed (Table 4).

individual or entity for ocean quahogs was 22% under both the net actual percentage model and cumulative percentage model regardless of affiliation levels analyzed for the same reasons identified above for surfclams (Table 3).

As indicated above, the highest level of quota share held by any individual or entity during the 2016-2017 period was 28% for surfclams and 22% for ocean quahogs (Tables 2 and 3). A 28% cap for surfclams could potentially result in a minimum (if fully consolidated) of four large entities participating in the fishery (i.e., four large entities at 28%, 28%, 28%, and 16%). This implies at least four entities holding surfclam quota, which may provide some protection against predation or foreclosure of competitors. A 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in the fishery (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%).[50] This implies at least five entities holding ocean quahog quota, which may provide some protection against predation or foreclosure of competitors. As previously indicated, "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails" (Walden 2011).

The number of entities above and below specific maximum cap values for the various alternatives and sub-alternatives discussed in section 7 are presented in Tables 18-21.[51] If the surfclam and ocean quahog cap levels described above (28% and 22%, respectively) had been implemented in 2017, all entities would have fallen at or below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.1 in the surfclam or ocean quahog fisheries.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This sub-alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. Therefore, while sub-alternative 2.1 would establish a relatively low single cap quota share ownership of 28% that limits the exercise of market power through capping ownership levels for surfclams, it does not address the creation or exercise of market power through contractual control of quota.

Sub-alternative 2.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. As previously indicated, an excessive share would be a level of quota control that results in market

[50] The resulting number of minimum entities under excessive shares alternatives 2 through 4 assume that market demand equals supply. When this is not the case, the leasing market could be disrupted (because available quota is larger than product demand) which could result in smaller firms or entities not associated with a processor be driven out of business.

[51] See Box 7.4 for a brief description of common terminology and definitions used in Tables 18-21.

power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Box 7.4. Terminology associated with the models and affiliation levels presented in Tables 18 to 21.

Models	
Net Actual Percentage Model	Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.
Cumulative 100% Model	Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.
Affiliation Levels	
Individual/Business Level	Smallest unit at the individual level or business (if an individual owner cannot be identified).
Family Level	Includes any family associations that are not already accounted at the individual or business level.
Corporate Officer Level	Includes association through corporate officer's that are not accounted for in the other levels.
PCT	Percentage
sm, lg	Small, Large

Under Sub-Alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.2 in the surfclam or ocean quahog fisheries.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This sub-alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. Therefore, while sub-alternative 2.2 would establish a single cap quota share ownership of 49% that limits the exercise of market power through capping ownership levels for surfclams, it does not address the creation or exercise of market power through contractual control of quota.

Sub-alternative 2.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. As previously indicated, an excessive share would be a level of quota control that results in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under Sub-Alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by some industry representatives. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly). A 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%; Table 18).

If the surfclam and ocean quahog cap levels described above (95% for surfclam and 95% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.3 in the surfclam or ocean quahog fisheries.

It is stated in the Compass Lexecon Report it is possible that under some circumstances an excessive share cap of 100% may be appropriate. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011). Alternative 2.3 could potentially result in quota accumulation levels that are near identical to those under alternative 1 (*status quo* alternative). Lastly, if one firm or entity controls 95% of the quota, there would be no market for leasing under the current quota levels for these species, as nearly all the quota would be held by a single entity.

As previously indicated under the *status quo* alternative, while current levels of share consolidation do not appear to result in market power in the product market (monopoly), it could create market power in the input market (monopsony) for the fishery resource, or the quota share market. In fact, the CIE review of the Compass Lexecon Report indicated that more attention should be paid to the *monopsony* problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[52] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry with a small number processors and vessels predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern that monopolization in the output market (Walden 2011).

Monopsony power could be exercised by processors over harvesters by reducing their demand for harvesting services, lowering the market price of harvesting services and increasing profits to the processing sector. However, if a processor owns a harvester, that firm would not benefit by underutilizing its own harvesting assets in order to depress the price of harvesting services. The processor will be motivated to use its own harvesting capacity when the incremental value of the harvest to the processor exceeds the incremental cost of harvesting, without regard for the effect of the additional harvesting on the market price of harvesting services. As a result, vertically integrated processors will increase harvest levels over those non-vertically integrated processors would choose were they to have influence over the market price of harvesting services (Mitchell et al. 2011). Lastly, from a social perspective, concentration of ownership and control could affect the social and community structure and participation in these fisheries.

Sub-alternative 2.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.3 could potentially allow for share concentration levels similar to those under the current conditions and as such, it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Sub-alternative 2.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions. Sub-alternative 2.3 could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.

Comparisons Across Sub-Alternatives 2.1 to 2.3

In this section a comparison between sub-alternatives 2.1 through 2.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 2.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 2.2 and 2.3. However, in the long-term, alternative 2.1 would have slight positive

[52] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

socioeconomic impacts compared to sub-alternative 2.2, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation. For example, sub-alternative 2.1 could potentially result in a minimum of four (surfclam) to five (ocean quahog) large and efficient companies (e.g., with more than 10% market share), while sub-alternative 2.2 could potentially result in only two large and efficient companies (Table 18). An excessive-share cap of 28% for surfclams and 22% for ocean quahogs could potentially ensure that there would be at least four to five processors operating at reasonable output levels, respectively. Lastly, sub-alternative 2.1 would have positive socio-economic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation (as sub-alternative 2.3 could potentially result in one large entity controlling 95% of the quota for surfclam and/or ocean quahogs).

Sub-alternative 2.2 would have less positive socioeconomic impacts in the long-term compared to sub-alternatives 2.1, as sub-alternative 2.2 has the potential to provide a smaller degree of protection against excessive consolidation. Lastly, sub-alternative 2.2 would have positive socioeconomic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.2 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 2.3 would have negative socioeconomic impacts in the long-term compared to sub-alternatives 2.1 and 2.2, as sub-alternative 2.3 has the potential to provide the smallest degree of protection against excessive consolidation.

In general terms, when ranking these three sub-alternatives, sub-alternative 2.1 would result in the most positive impacts, sub-alternative 2.2 would result in the second most positive impacts, and sub-alternative 2.3 would result in the least positive impacts.

Table 18. Potential impacts of sub-alternatives 2.1, 2.2, and 2.3 (Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 2.1 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28%		28%		28%		28%		28%		28%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16
Ocean Quahog Values												
Cap value	22%		22%		22%		22%		22%		22%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12
Sub-Alternative 2.2 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); this cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing												
Surfclam Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Sub-Alternative 2.3 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); cap at 95% based on industry representatives indicating that there is no market power (no monopolistic behavior)												
Surfclam Values												
Cap value	95%		95%		95%		95%		95%		95%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5
Ocean Quahog Values												
Cap value	95%		95%		95%		95%		95%		95%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5

Table 19. Potential impacts of sub-alternative 3.1, 3.2, and 3.3 (Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 3.1 - Combined Cap –Combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28%		33%		44%		48%		49%		49%	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	28; 28; 28; 16	3 lg; 1 sm	33; 33; 33; 1	3 lg	44; 44; 12	2 lg; 1 sm	48; 48; 3	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	29%		29%		39%		41%		41%		41%	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	4 lg	29; 29; 29; 13	4 lg	29; 29; 29; 13	3 lg	39, 39, 22	3 lg	41; 41; 18	3 lg	41; 41; 18	3 lg	41; 41; 18
Sub-Alternative 3.2 - Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags); cap at 40% based on recommendations provided in the Compass Lexecon Report												
Surfclam Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	53	0	54	0	54	0	69	1	68	2	67	3
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Ocean Quahog Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	43	0	43	0	43	0	46	1	44	3	43	4
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Sub-Alternative 3.3 - Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags); cap at 49% based on the tilefish IFQ cap (i.e., ownership plus leasing)												
Surfclam Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2

Table 20. Potential impacts of sub-alternative 4.1, 4.2, and 4.3 (Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 4.1 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28/28		28/33		28/44		28/48		28/49		28/49	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16
Ocean Quahog Values												
Cap value	22/29		22/29		22/39		22/41		22/41		22/41	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12
Sub-Alternative 4.2 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017 plus 15% added to the maximum levels to allow for additional consolidation												
Surfclam Values												
Cap value	43/43		43/48		43/59		43/63		43/64		43/64	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14
Ocean Quahog Values												
Cap value	37/44		37/44		37/54		37/56		37/56		37/56	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26
Sub-Alternative 4.3 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on ownership quota share at 30% and combined cap at 60%												
Surfclam Values												
Cap value	30/60		30/60		30/60		30/60		30/60		30/60	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10
Ocean Quahog Values												
Cap value	30/60		30/60		30/60		30/60		30/60		30/60	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10

Table 21. Potential impacts of alternative 5 (Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Alternative 6 - Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota												
Surfclam Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Ocean Quahog Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20

Under alternative 3, a combined cap would be implemented – combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex business practices that occur in these fisheries.

Under sub-alternative 3.1, the cap would be based on the highest level of combined cap held by any individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The combined caps under this alternative would depend on the determination of combined levels (quota share ownership plus cage tag leasing) under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

Under sub-alternative 3.1, depending on the affiliate level and model selected, the combined cap for surfclam could be as low as 28% under the net actual percentage model (at the individual/business level) or as high as 49% under the cumulative 100% model (at the corporate officer level; Table 2). Based on these combined cap values, sub-alternative 3.1 could result in a minimum number of large entities in the surfclam fishery ranging from four under the net actual percentage model to two under the cumulative 100% model (Table 19). Under this alternative, depending on the affiliate level and model selected, the combined cap for ocean quahogs could be as low as 29% under the net actual percentage model (at the individual/business level) or as high as 41% under the cumulative 100% model (at the corporate officer level; Table 3). For ocean quahogs, this sub-alternative could result in a minimum number of large entities ranging from four under the net actual percentage model to three under the cumulative 100% model (Table 19).

If the surfclam and ocean quahog combined cap levels described above had been implemented in 2017, all entities would have fallen below those combined caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the combined cap levels under sub-alternative 3.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 3.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. In addition, since this alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share would be a level

of quota control that results in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures [ensure] that there would be at least three processors operating at reasonable output levels" (Walden 2011). A 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those combined caps under the net actual percentage model for both surfclams and ocean quahogs. However, under the cumulative 100% model, between one (1% of all entities) and three (4% of all entities) surfclam entities and between one (2% of all entities) and four (9% of all entities) ocean quahog entities would have had combined cap above these levels depending on the affiliation level (Table 19).

Sub-alternative 3.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. In general terms, sub-alternative 3.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. However, as indicated above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model,) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

In addition, since this alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review;

Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share would be a level of quota control that results in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.2 in the surfclam or ocean quahog fisheries (Table 19).

Sub-alternative 3.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 3.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. In addition, since this alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share would be a level of quota control that results in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Comparisons Across Sub-Alternatives 3.1 to 3.3

In this section a comparison between sub-alternatives 3.1 through 3.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 3.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 3.2 and 3.3. In the long-term, alternative 3.1 would have no socioeconomic impacts in the long-term compared to sub-alternative 3.2, because they both could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 19). The exception to this generalization would be sub-alternative 3.1 under the cumulative 100% model which would result in two large entities participating in the surfclam fishery, and as such, provides a lesser degree of protection against excessive consolidation. As such, this results in long-term positive impacts that are smaller in magnitude. Lastly, in general terms, sub-alternative 3.1 would have positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.1 has the potential to provide a larger degree of protection against excessive consolidation.

In general terms, sub-alternative 3.2 would have slight positive socioeconomic impacts in the long-term compared to sub-alternatives 3.3, as sub-alternative 3.2 has the potential to provide a larger degree of protection against excessive consolidation. However, as noted above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model,) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Sub-alternative 3.3 would have slightly less positive socioeconomic impacts in the long-term compared to sub-alternatives 3.1 and 3.2, as sub-alternative 3.3 has the potential to provide a smaller degree of protection against excessive consolidation.

In general terms, when ranking these three sub-alternatives, sub-alternative 3.1 would result in the most positive impacts, sub-alternative 3.2 would result in the second most positive impacts, and sub-alternative 3.3 would result in the least positive impacts.

Under Alternative 4, a two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Mitchell et al. (2011) indicated that "the preference for short-term accumulations in the two-part cap limits the share of long-term quota controlled by any single party, which limits the ability to foreclose competitors by withholding quota on a committed multiseason basis." Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex business practices that occur in these fisheries.

Under sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage tags) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

Under sub-alternative 4.1, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 28% ownership / 28% combined under the net actual percentage model (at the individual/business level) or as high as 28% ownership / 49% combined under the cumulative 100% model (at the corporate officer level; Tables 2 and 20). Based on these combined cap values, sub-alternative 4.1 could result in a minimum number of five large entities in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 22% ownership / 29% combined under the net actual percentage model (at the individual/business level) or as high as 22% ownership / 41% combined under the cumulative 100% model (at the corporate officer level; Tables 3 and 20). For ocean quahogs, this sub-alternative could result in a minimum number of five large entities in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. In addition, since this alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share would be a level of quota control that results in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective,

excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for the 2016-2017 period to allow for additional consolidation (Table 20). The 15% value to allow for additional consolidation was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. As with sub-alternative 4.1, the two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Table 20.

Under sub-alternative 4.2, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 43% ownership / 43% combined under the net actual percentage model (at the individual/business level) or as high as 43% ownership / 64% combined under the cumulative 100% model (at the corporate officer level; Table 20). Based on these combined cap values, sub-alternative 4.1 could result in a minimum number of five large entities in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 37% ownership / 44% combined under the net actual percentage model (at the individual/business level) or as high as 37% ownership / 56% combined under the cumulative 100% model (at the corporate officer level; Table 20). For ocean quahogs, this sub-alternative could result in a minimum number of five large entities in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. In addition, since this alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share would be a level

of quota control that results in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. A 30% ownership cap and a 60% combined cap (quota share ownership plus leasing of annual allocation or cage tags) could potentially result in a minimum of four large entities participating in the fisheries (i.e., 30%, 30%, 30%, 10%; Table 20).

If the surfclam and ocean quahog two-part cap levels described above (i.e., 30%/60%) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.3 in the surfclam or ocean quahog fisheries (Table 20).

Sub-alternative 4.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. In addition, since this alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share would be a level of quota control that results in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Comparisons Across Sub-Alternatives 4.1 to 4.3

In this section a comparison between sub-alternatives 4.1 through 4.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

In general terms, sub-alternatives 4.1, 4.2, and 4.3 are likely to have neutral socioeconomic impacts (e.g., similar magnitude and direction) in the short-term and long-term, because they all could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 20). As such, they all have the potential to provide a relatively similar degree of protection against excessive consolidation.

Under Alternatives 5, a cap on quota share ownership-only of 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags) would be implemented. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

The 40% cap under this alternative is based on recommendations found in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures [ensure] that there would be at least three processors operating at reasonable output levels" (Walden 2011).

This alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). The FMAT noted that the "two-part system" (i.e., cap on ownership plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of a "two-part system" is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. A 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 21).

If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 21). As such, no entity would have been constrained by the cap levels under alternative 5 in the surfclam or ocean quahog fisheries.

As indicated above, in addition to the cap on quota share ownership, this alternative would also establish Quota A and B shares (for each individual species). A hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work is presented in section 5.1.5. In general terms, this alternative would align Quota A shares (the initial quota level) with recent years landings (a proxy for market demand). Quota A shares (and associated number of cage tags) would be released at the onset of the fishing year and Quota B shares (and associated number of cage tags) would be released when Quota A shares are use/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. However, if the supply of quota released under Quota A shares equals the market demand, there may be less incentive for a quota holder to enter into long-term contracts. One of the reasons long-term contracts exist is that if a quota holder doesn't enter into one, then there is a real possibility that they won't be able to lease their quota out at all in a given fishing year as the overall quota level for these fisheries have been at values that exceed market demand. It is possible that under this alternative, if there is less of an incentive to enter into long-term leases, their arrangements may change if the price of leases increase.

The Atlantic Surfclam and Ocean Quahog Information Collection Program Data (Ownership Data) was designed to gather information on leases (short-term and long-term) to assist in determining contractual control of quota. However, industry members have indicated that they would not release this information as some people consider it private. As such, it is not likely that contractual control of quota can be accurately tracked.

Alternative 5 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, alternative 5 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

In addition, since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase.

In addition, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. However, this is not expected to increase the cost of harvesting. The real cost of harvesting and processing should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc. Processors will likely have to pay more in financial costs (due to additional leasing costs). This is due will be due to the fact they cannot longer capture the rents that are due to the quota holders that have not been able to use or lease their quota allocations" in

recent years (what some people refer to as "ITQ owning non-participants") because the policy will allow them to participate again in the fishery.

Surfclam and Ocean quahog processors have indicated in the past that they cannot influence the price of the products they sell, as the large companies that purchase from them (Campbell Soup Company, Progresso, etc.) will not consider price increases as they can buy other raw materials to produce their products. As such, it would be expected that profits for the processing sector would go down. In conclusion, while not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. If this alternative is selected by the Council additional analysis should be conducted to determine the appropriate trigger level.

Under Alternatives 6, a cap on quota share ownership-only of 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) would be implemented. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish it is applied to ownership and leasing combined. The only difference between alternatives 5 and 6 are the cap levels on quota share ownership, all other aspects of the alternatives are identical.

Like alternative 5, this alternative would also align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). A 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%). The resulting number of participating entities under this alternative are similar to those under sub-alternative 2.2 (which would also implement a 49% quota share cap; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; see results under sub-alternative 2.2 in Table 18). As such, no entity would have been constrained by the cap levels under alternative 6 in the surfclam or ocean quahog fisheries.

As indicated above, in addition to the cap on quota share ownership, this alternative would also establish Quota A and B shares (for each individual species). A hypothetical example how the two

quota-tier system (Quota A shares and Quota B shares) would work is presented in section 5.1.5. In general terms, this alternative would align Quota A shares (the initial quota level) with recent years landings (a proxy for market demand). Quota A shares (and associated number of cage tags) would be released at the onset of the fishing year and Quota B shares (and associated number of cage tags) would be released when Quota A shares are use/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. However, if the supply of quota released under Quota A shares equals the market demand, there may be less incentive for a quota holder to enter into long-term contracts. One of the reasons long-term contracts exist is that if a quota holder doesn't enter into one, then there is a real possibility that they won't be able to lease their quota out at all in a given fishing year as the overall quota level for these fisheries have been at values that exceed market demand. It is possible that under this alternative, if there is less of an incentive to enter into long-term leases, their arrangements may change if the price of leases increase.

The Atlantic Surfclam and Ocean Quahog Information Collection Program Data (Ownership Data) was designed to gather information on leases (short-term and long-term) to assist in determining contractual control of quota. However, industry members have indicated that they would not release this information as some people consider it private. As such, it is not likely that contractual control of quota can be accurately tracked.

Alternative 6 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions. However, alternative 6 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive share consolidation and associated market power issues. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

In addition, since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase.

In addition, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. However, this is not expected to increase the cost of harvesting. The real cost of harvesting and processing should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc. Processors will likely have to pay more in financial costs (due to additional leasing costs). This is due will be due to the fact they cannot longer capture the rents that are due to the quota holders that have not been able to use or lease their quota allocations" in recent years (what some people refer to as "ITQ owning non-participants") because the policy will allow them to participate again in the fishery.

Surfclam and Ocean quahog processors have indicated in the past that they cannot influence the price of the products they sell, as the large companies that purchase from them (Campbell Soup Company, Progresso, etc.) will not consider price increases as they can buy other raw materials to produce their products. As such, it would be expected that profits for the processing sector would go down. In conclusion, while not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. If this alternative is selected by the Council additional analysis should be conducted to determine the appropriate trigger level.

Comparisons Across All Excessive Shares Alternatives

In general terms, alternatives 5 and 6 would result in the largest positive impacts, alternatives 3 and 4 would result in the second highest positive impacts, alternative 2 would result in the third highest positive impacts, and alternative 1 would result in the least positive impacts. More detail of the expected impacts is provided below.

Alternative 1 (No Action)

As previously indicated, under alternative 1 (no action) no limit or definition of excessive shares accumulation is included in the FMP. This alterative is expected to result in impacts ranging from no impacts in the short-term to negative impacts in the long-term when compared to alternatives 2 through alternative 6, because alternative 1 provides no protection against excessive consolidation. The exception would be when alternative 1 is compared to sub-alternative 2.3, as sub-alternative 2.3 could potentially allow for share concentration levels similar to those under alternative 1, and it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or

ocean quahog fisheries. Compared to sub-alternative 2.3, alternative 1 is likely to have a similar magnitude of socioeconomic impacts (i.e., neutral).[53]

None of the excessive share alternatives discussed in this document are expected to impact the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in landings or ex-vessel revenues are expected when compared to current conditions.

Alternative 2

Alternative 2 would implement a single cap based on quota share ownership-only with unlimited leasing of annual allocations (cage tags). Because alternative 2 is based on ownership-only values, it does not account for leasing or other transactions and complex business practices (e.g., combined ownership plus leasing) that are prevalent in the fisheries when setting the cap limit. This alternative would limit the exercise of market power through capping ownership levels for surfclams and ocean quahogs, but it does not address the creation or exercise of market power through contractual control of quota.

Alternative 2 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive share consolidation and associated market issues. Compared to alternative 3 and alternative 4, alternative 2 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternatives 3 and 4).

Lastly, alternative 2 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market.

Alternative 3

Alternative 3 would implement a combined cap based on quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex business practices that occur in these fisheries.

[53] Since sub-alternative 2.3 is likely to result in impacts similar to those under alternative 1, all other comparisons involving alternative 2 exclude sub-alternative 2.3, with the understanding that when comparisons are made with sub-alternative 2.3 exclusively, impacts would be similar to those under alternative 1 (no action).

Alternative 3 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive share consolidation and associated market issues. Compared to alternative 2, alternative 3 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 3). Compared to alternative 4, alternative 3 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 3 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market.

Alternative 4

Alternative 4 would implement a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex business practices that occur in these fisheries.

Alternative 4 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive share consolidation and associated market issues. Compared to alternative 2, alternative 4 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 4). Compared to alternative 3, alternative 4 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 4 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market.

Alternative 5

Alternative 5 would implement a cap on quota share ownership-only with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Alternative 5 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because alternative 5 not only addresses the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also aligns supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market. For these same reasons, alternative 4 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) compared to alternatives 2, 3, and 5, but likely smaller in magnitude. Lastly, compared to alternative 6, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market. While not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Alternative 6

The expected impacts under alternative 6 are similar to those described under alternative 5 above.

Comparison of Excessive Shares Review Alternatives

Under alternative 1 (no action), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. Therefore, the no action alternative is expected to have no impact on the quantity of surfclam or ocean quahog landings, including revenues. However, as previously indicated, conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions will likely change in the future. Therefore, an excessive shares measure established at an appropriate level could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry). Thus, not having a mechanism in place to review the effectiveness of any implemented excessive shares measures could result in socioeconomic impacts that range from no impacts (if implemented excessive shares measures or cap level is appropriate through time) to slight negative (if implemented excessive shares measures or cap level is not appropriate through time). Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. As with the no action alternative above, alternative 2 is not expected to have impacts on the quantity of surfclam or ocean quahog landings, including revenues. However, this alternative allows periodic review of any excessive shares measures that the Council adopts. As previously indicated conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions will likely change in the future. This alternative would implement a periodic review of regulations to protect against market power or other anticompetitive behaviors in these fisheries in a timely manner. Alternative 2 is expected to result in socioeconomic impacts ranging from no impacts to slight positive. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts. While it is not possible to anticipate the potential management costs associated with alternative 2, they are likely to be higher than those associated with alternative 1. Costs will depend on the complexity and scope of the review process.

Comparisons of Framework Adjustment Process Alternatives

Under alternative 1 (no action), the list of management measures that have been identified in the FMP that could be addressed via framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process.

The Council would still have the prerogative to review any adopted excessive shares measures and make modifications to any implemented excessive cap level through an amendment if it becomes inefficiently high or low through time as fisheries conditions change. However, making modifications to existing regulations using an amendment process typically requires more work and time compared to a framework process. Not having the flexibility to make minor modifications to the excessive share cap level (no action alternative) could result in socioeconomic impacts ranging from no impact to slightly negative. Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive share cap level to the list of frameworkable actions in the FMP. This frameworkable item would provide means to make modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to select cap). The proposed alternative would provide flexibility to address potential modifications to any implemented excessive cap level if it becomes inefficiently high or low through time as fisheries conditions change. Alternative 2 is expected to result in socioeconomic impacts that range from no impact to slight positive. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts.

Comparisons of Multi-Year Management Measures Alternatives

Under alternative 1 (no action), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no socioeconomic impacts. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Alternative 2 would allow for specifications to be set for a maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year during the multi-year specifications period to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no socioeconomic impacts. Alternative 2 would have socioeconomic impacts that are the same as those under alternative 1.

Although there are no socioeconomic impacts associated with alternative 2, it is expected that it would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process).

7.5 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ; 40 CFR §1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective. Rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required under NEPA as part of an EA if the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed surfclams and ocean quahog fisheries.

7.5.1 Consideration of the VECs

The following sections discuss the significance of the cumulative effects on the following VECs:

- Managed resource (Atlantic surfclam and ocean quahog) and non-target species
- Physical environment
- Protected species
- Human communities

7.5.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of Atlantic surfclam and ocean quahog. The Western Atlantic Ocean is the core geographic scope for each of the VECs. The core geographic scopes for the managed species are the management units (section 6.1). For non-target species, those ranges may be expanded and would depend on the range of each species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ

but includes all habitat utilized by surfclam and ocean quahog and non-target species in the Western Atlantic Ocean. The core geographic scope for protected species is their range in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities in coastal states from Maine through Virginia directly involved in the harvest or processing of the managed species (section 6.4).

7.5.3 Temporal Boundaries

The temporal scope of past and present actions for VECs is primarily focused on actions that have occurred after FMP implementation (1977 for surfclam and ocean quahog). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.3) and is largely focused on the 1980s and 1990s through the present, when NOAA Fisheries began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about three years (2022) into the future. This period was chosen because the dynamic nature of resource management and lack of information on projects that may occur in the future make it very difficult to predict impacts beyond this timeframe with any certainty.

7.5.4 Actions Other Than Those Proposed in this Document

The impacts of the alternatives considered in this document are described in sections 7.1 through 7.4. Table 22 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions other than those considered in this document. The impacts of these actions are described qualitatively as the actual impacts are too complex to be quantified in a meaningful way. When any of these abbreviations (P, Pr, or RFF), occur together it indicates that some past actions are still relevant to the present and/or future actions.

Fishery Management Actions

Surfclam and Ocean Quahog FMP Actions

Past, present, and reasonably foreseeable future actions for surfclam and ocean quahogs management include the establishment of the original FMPs, all subsequent amendments and frameworks, and the setting of annual specifications (annual catch limits and measures to constrain catch and harvest). These fisheries are managed under an ITQ system, and recently, the NMFS implemented a data collection protocol process to collect information about quota share ownership that would enhance the management of these fisheries. The historical management practices of the Council have resulted in overall positive impacts on the health of the surfclam and ocean quahog stocks (section 7.5.5.1). The Council has taken many actions to manage the associated commercial fisheries. The MSA is the statutory basis for federal fisheries management. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Other FMP Actions

In addition to the Atlantic Surfclam and Ocean Quahog FMP, there are many other FMPs and associated fishery management actions for other species that have impacted these VECs over the temporal scale described in section 7.3.3. These include FMPs managed by the Mid-Atlantic Fishery Management Council, New England Fishery Management Council, Atlantic States Marine Fisheries Commission, and to a lesser extent the South Atlantic Fishery Management Council. Omnibus amendments are also frequently developed to amend multiple FMPs at once. Actions associated with other FMPs and omnibus amendments have included measures to regulate fishing effort for other species, measures to protect habitat and forage species, and fishery monitoring and reporting requirements.

As with the surfclam and ocean quahog actions described above, other FMP actions developed by Fishery Management Councils or GARFO have been developed in compliance with the MSA and have had positive long-term cumulative impacts on managed and non-target species, habitat, and protected resources because they constrain fishing effort and manage stocks at sustainable levels. However, constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Non-Fishing Impacts

Other Human Activities

Non-fishing activities that introduce chemical pollutants, sewage, or suspended sediment into the marine environment or result in changes in water temperature, salinity, or dissolved oxygen, pose a risk to all VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging, and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and as such may indirectly constrain the sustainability of managed species, non-target species, and protected species. Decreased habitat suitability tends to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that reduce fishing effort could negatively impact human communities. The overall impact on the affected species and their habitats on a population level is unknown, but likely to range from no impact to low negative, depending on the population, since a large portion of these populations have a limited or minor exposure to these local non-fishing perturbations.

Non-fishing activities permitted under other Federal agencies (e.g. beach nourishment, offshore wind facilities, etc.) require examinations of potential impacts on the VECs. The MSA imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH (50 CFR §600.930). The eight regional fishery management councils engage in this review process by making comments and recommendations on federal or state

actions that may affect habitat for their managed species and by commenting on actions likely to substantially affect habitat.

In addition to the activities above, in recent years, offshore wind energy and oil and gas exploration have become more relevant activities in the Greater Atlantic region that are expected to impact all VECs, as described below. For potential biological impacts of wind, the turbines and cables may influence water currents and electromagnetic fields, respectively, which can affect patterns of movement for various species (target, non-target, protected). Habitats directly at the turbine and cable sites would be affected, and there could be scouring concerns around turbines. Impacts on human communities in a general sense will be mixed – there will be economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generated using fossil fuels with renewable sources. But there may be negative effects on fishing activities in terms of effort displacement, or making fishing more difficult or expensive near the turbines or cables.

For oil and gas, this timeframe would include leasing and possible surveys. Seismic surveys impact the acoustic environment within which marine species live, and have uncertain effects on fish behaviors that could cumulatively lead to negative population level impacts. The science on this is fairly uncertain. If marine resources are affected by seismic, then so in turn the fishermen targeting these resources would be affected. However, there would be an economic component in the form of increased jobs where there may be some positive effects on human communities.

While there are currently no operational wind farms in Mid-Atlantic waters, potential offshore wind energy sites have been identified off of Virginia, Maryland, New Jersey, Delaware, and New York, and there are several proposals to develop wind farms in both nearshore and offshore waters. In New England, offshore wind project construction south of Massachusetts/Rhode Island may begin as early as 2019 (three projects including Vineyard Wind, Bay State Wind, and South Fork Wind Farm). Additional areas have been leased and will have site assessment activities in the next few years. These projects could have low negative impacts on EFH, as well as surfclam and ocean quahog, non-target species, and fishing communities if there are any negative impacts on those resources. Furthermore, there could be negative impacts on protected species of birds and marine mammals if they interact with the wind farms.

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats on a population level is unknown, but likely to range from no impact to moderate negative, depending on the number and locations of projects that occur, as well as the effects of mitigation efforts.

Global Climate Change

Global climate change affects all components of marine ecosystems, including human communities. Physical changes that are occurring and will continue to occur to these systems include sea-level rise, changes in sediment deposition; changes in ocean circulation; increased frequency, intensity and duration of extreme climate events; changing ocean chemistry, and warming ocean temperatures. Emerging evidence demonstrates that these physical changes are resulting in direct and indirect ecological responses within marine ecosystems which may alter the

fundamental production characteristics of marine systems (Stenseth et al. 2002). Climate change will potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors.

Results from the Northeast Fisheries Climate Vulnerability Assessment indicate that climate change could have impacts on Council-managed species that range from negative to positive, depending on the adaptability of each species to the changing environment (Hare et al. 2016).[54] Based on this assessment, surfclam was determined to have a high overall vulnerability to climate change. The exposure of surfclam to the effects of climate change was determined to be "high" due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All surfclam life stages use marine habitats. Surfclam spawning occurs in summer and early fall in warm water, starting earlier inshore than offshore. Surfclam eggs hatch into a trochophore larvae within 1-2 days of fertilization. Larvae cannot survive high temperatures. Juveniles and adults occur in coastal waters up to 66 m. The distributional vulnerability of surfclam was ranked as "high," as surfclam mortality is higher at higher temperatures. Surfclam was determined to have a "high" biological sensitivity to climate change as they form calcium carbonate shell and adults are sessile.

This assessment determined ocean quahog had a very high overall vulnerability to climate change. Similar to surfclam, the exposure of ocean quahog to the effects of climate change was determined to be "high" due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All ocean quahog life stages use marine habitats. Ocean quahog is a cold-water, long-lived bivalve. Ocean quahog broadcast spawn over a protracted season and planktonic eggs mature into free-swimming trochophore, the pediveliger stage, swims, but also has a foot for burrowing. Temperatures affect growth rate. Juveniles occur in offshore sandy substrates and adults occur in dense beds over level bottom just below the surface sediments in medium to fine grain sand. Ocean quahogs usually occur at depts between 25-61 m and temperature regulates the cross-shelf distribution. Also similar to surfclam, the distributional vulnerability was ranked as "high" as growth slows at higher temperatures. Ocean quahog was determined to have a "very high" biological sensitivity to climate due to population growth rate, sensitivity to ocean acidification, adult mobility, slow growth, from calcium carbonate shell, and adults are sessile (Hare et al. 2016).

Overall, climate change is expected to have impacts that range from positive to negative depending on the species. For surfclams and ocean quahogs climate change impacts are high. However, future mitigation and adaptation strategies to climate change may mitigate some of these impacts. The science of predicting, evaluating, monitoring and categorizing these changes continues to evolve.

[54] Climate vulnerability profiles for individual species are available at: https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index

Table 22. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr **Original Surfclam and Ocean Quahog FMP and subsequent FMP Amendments and Frameworks**	Established management measures	**Indirect Positive** Regulatory tool available to rebuild and manage stocks	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Benefited domestic businesses
P, Pr **Surfclam and Ocean Quahog Specifications**	Establish quotas, other fishery regulations	**Indirect Positive** Regulatory tool to specify catch limits, and other regulation; allows response to annual stock updates	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Benefited domestic businesses
P, Pr, RFF **Developed, Applied, and Redo of Standardized Bycatch Reporting Methodology**	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	**No Impact** May improve data quality for monitoring total removals of managed resource	**No Impact** May improve data quality for monitoring removals of non-target species	**No Impact** Will not affect distribution of effort	**No Impact** May increase observer coverage and will not affect distribution of effort	**Potentially Indirect Negative** May impose an inconvenience on vessel operations
P, Pr, RFF **Other FMPs and Omnibus Actions**	Regulating fishing effort in other FMPs, habitat and forage species protection, industry monitoring and reporting	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Indirect Positive** Reduced fishing effort, implemented gear requirements	**Indirect Positive** Regulated fishing effort, implemented gear requirements	**Mixed** Benefited some domestic businesses; negative impacts on some participants due to limited access and constraints on landings and revenues
P, Pr, RFF **PSP Closed Areas**	Reopening of PSP Closed Areas to Clam fishing	**No Impact to Indirect Negative** Fishery impacts in previously unfished areas	**Indirect Positive** Reduced overall fishing effort	**Indirect Positive** Reduced overall fishing effort	**No Impact** Limited interactions with gear occur	**Indirect Positive** Benefitted domestic businesses

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Agricultural runoff**	Nutrients applied to agricultural land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource
P, Pr, RFF **Climate change**	Wide-ranging impacts including changes in ocean chemistry, temperatures, sea-level, and ocean circulation; increased frequency, intensity, and duration of extreme climate events.	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Decreased habitat quality, suitability and/or availability for some species; increased quality/suitability/availability for others	**Negative to positive** Depending on impacts to habitat and prey availability	**Negative to positive** Depending on resiliency of individual communities and mitigation/adaptation
P, Pr, RFF **Port maintenance**	Dredging of coastal, port and harbor areas for port maintenance	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
P, Pr, RFF **Offshore disposal of dredged materials**	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability
P, Pr, RFF **Beach nourishment**	Offshore mining of sand for beaches	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for mining companies, possibly negative for fishing industry
	Placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Positive** Beachgoers like sand; positive for tourism

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Marine transportation**	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for some interests, potential displacement for others
P, Pr, RFF **Renewable and Non-renewable Offshore and Nearshore Energy Development**	Transportation of oil, gas, and electric through pipelines and cables; Construction of oil platforms, wind facilities, liquefied natural gas facilities; Additional port development infrastructure	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Reduced habitat quality; offshore platforms may benefit structure oriented fish species habitat	**Potentially Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
Pr, RFF **Implementation of Data Collection Protocol**	Collect data needed to track ITQ share ownership within the fishery	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**Uncertain – Likely Mixed** Collects data needed to evaluate excessive shares cap, but additional paperwork may be required
RFF **Amendment to address Excessive Shares (within 3 years)**	Establish a cap for excessive share accumulation	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**Indirect Positive** Protects against excessive share accumulation in fishery

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
RFF **Omnibus EFH Amendment 2 (NEFMC) and Clam Access Frameworks**	Revises essential fish habitat and habitat area of particular concern designations, revises or creates habitat management areas, including gear restrictions	**Indirect Positive** Improve habitat quality	**Indirect Positive** Improve habitat quality	**Indirect Positive** Improve habitat quality	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues
RFF **Convening of Take Reduction Teams (periodically)**	Recommend measures to reduce mortality and injury to marine mammals	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

7.5.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section describes the expected effects of these actions on each VEC.

7.5.5.1 Magnitude and Significance of Cumulative Effects on Managed Species and Non-Target Species

Those past, present, and reasonably foreseeable future actions which may impact target species (surfclam and ocean quahog) and non-target species, and the direction of those potential impacts, are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore and marine areas where the projects occur; therefore, the magnitude of those impacts on the managed resources is expected to be limited due to limited exposure to the populations at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on productivity of the managed resources is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and the annual specifications process have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions described in Table 22 will have additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect the ecosystem services on the productivity of managed species depends. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the managed resources have had positive cumulative effects.

Catch limits, commercial quotas and recreational harvest limits for each of the managed species have been specified to ensure that these rebuilt stocks are managed sustainably and that measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from specification of management measures are largely dependent on how effective those measures are in meeting the objectives of preventing overfishing and achieving optimum yield, and on the extent to which mitigating measures are effective. The proposed actions described in this document would positively reinforce the past and anticipated positive cumulative effects on the managed resources by achieving the objectives specified in the respective FMP and ensuring the requirements of the MSA are met. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (Table 22).

7.5.5.2 Magnitude and Significance of Cumulative Effects on Physical Environment

Those past, present, and reasonably foreseeable future actions which may impact the physical environment and habitat (including EFH), and the direction of those potential impacts, are summarized in Table 22. The direct and indirect negative actions described in Table 22 are localized in nearshore and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to limited exposure of habitat at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on habitat is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by species under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and annual specifications process have had positive cumulative effects on habitat. The actions have constrained fishing effort both at a large scale and locally and have implemented gear requirements which may reduce impacts on habitat. As required under these FMP actions, EFH and Habitat Areas of Particular Concern were designated for the managed resources. It is anticipated that the future management actions described in Table 22 will result in additional direct or indirect positive effects on habitat through actions which protect EFH and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All the VECs are interrelated; therefore, the linkages among habitat quality, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and will likely continue to be, taken to improve the condition of habitat. Some actions, such as coastal population growth and climate change may indirectly impact habitat and ecosystem productivity; however, these actions are beyond the scope of NMFS and Council management. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had neutral to positive cumulative effects.

The proposed actions described in this document are largely administrative in nature and would not significantly change the past and anticipated cumulative effects on habitat and thus would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (Table 22).

7.5.5.3 Magnitude and Significance of Cumulative Effects on Protected Species

Those past, present, and reasonably foreseeable future actions which may impact protected species, and the direction of those impacts, are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore and marine project areas where they occur. Therefore, the magnitude of those impacts on protected species is expected to be limited due to limited exposure of the populations at large. Agricultural runoff may be much broader in scope

and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on protected species is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact protected species prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected species under NMFS' jurisdiction.

Given their life history dynamics, large changes in protected species abundance over long time periods, and the multiple and wide-ranging fisheries management actions that have occurred, the cumulative impacts on protected species were evaluated over a long-time frame (i.e., from the 1970's through the present). While some protected species are doing better than others, overall the trend of stock condition for protected resources has improved over the long-term due to reductions in the number of interactions. Past fishery management actions taken through the respective FMPs and annual specifications process have contributed to this long-term trend toward positive cumulative effect on protected species through the reduction of fishing effort (and thus reduction in potential interactions) and implementation of gear requirements. It is anticipated that future management actions, described in Table 22, will result in additional indirect positive effects on protected species. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected species have had a positive cumulative effect.

The proposed actions described in this document are largely administrative in nature and would not change the past and anticipated cumulative effects on protected species and thus would not have any significant effect on protected species individually or in conjunction with other anthropogenic activities (Table 22). Overall, actions have had, or will have, positive impacts on protected species.

7.5.5.4 Magnitude and Significance of Cumulative Effects on Human Communities

Those past, present, and reasonably foreseeable future actions which may impact human communities and the direction of those potential impacts are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. Those actions may displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal ecosystem may larger in magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the respective FMPs and annual specifications process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices while also sometimes reducing the availability

of the resource to fishery participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions described in Table 22 will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur if management actions result in reduced revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had overall positive cumulative effects.

Catch limits and commercial quotas for each of the managed species have been specified to ensure that these rebuilt stocks are managed in a sustainable manner and that management measures are consistent with the objectives of the FMPs under the guidance of the MSA. The impacts from annual specification of management measures on the managed species are largely dependent on how effective those measures are in meeting their intended objectives and the extent to which mitigating measures are effective.

Despite the potential for negative short-term effects on human communities, positive long-term effects are expected due to the long-term sustainability of the managed stocks. Overall, the proposed actions described in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (Table 22).

7.5.6 Preferred Action on all the VECs

[This section will be completed prior to submission to the NMFS]

8.0 APPLICABLE LAWS

8.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

8.1.1 National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The most recent FMP amendments describe how the management actions implemented comply with the National Standards. The Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield (OY) for Atlantic surfclam and ocean quahogs and the U.S. fishing industry.

To achieve OY, both scientific and management uncertainty need to be addressed when establishing catch limits that are less than the Overfishing Limit (OFL); therefore, the Council develops recommendations that do not exceed the ABC recommendations of the SSC which have been developed to explicitly address scientific uncertainty. In addition, the Council has considered relevant sources of management uncertainty and other social, economic, and ecological factors, which resulted in recommendations for annual catch targets for both managed resources. The Council uses the best scientific information available (National Standard 2) and manages both species throughout their range (National Standard 3). These management measures do not discriminate among residents of different states (National Standard 4), they do not have economic allocation as their sole purpose (National Standard 5), the measures account for variations in these fisheries (National Standard 6), they avoid unnecessary duplication (National Standard 7), they take into account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). Finally, actions taken are consistent with National Standard 9, which addresses bycatch in fisheries. The Council has implemented many regulations that have indirectly acted to reduce fishing gear impacts on EFH. By continuing to meet the National Standards requirements of the MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will insure that cumulative impacts of these actions will remain positive overall for the ports and communities that depend on these fisheries, the Nation as a whole, and certainly for the resources.

8.2 NEPA FINDING OF NO SIGNIFICANT IMPACT (FONSI)

[This section will be completed prior to submission to the NMFS]

The CEQ Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR §1508.27). In addition, the Companion Manual for NOAA Administrative Order 216-6A provides sixteen criteria (the same ten as the CEQ Regulations and six additional) for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

16. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting EA, it is hereby determined that the proposed actions in this document will not significantly impact the quality of the human environment as described above and in the EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

_____ _____

Regional Administrator for GARFO, NMFS, NOAA *Date*

8.3 Endangered Species Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on ESA-listed and MMPA protected resources. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on these fisheries.

8.4 Marine Mammal Protection Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on marine mammals protected under the MMPA. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect marine mammals or critical habitat in any manner not considered in previous consultations on the fisheries. A final determination of consistency with MMPA will be made by the agency during the rulemaking process.

8.5 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council has developed this amendment document and will submit it to NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through Virginia).

8.6 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of an FMP and subsequent amendments and framework adjustments. Development of this amendment document provided many opportunities for public review, input, and access to the rulemaking process. This action and the proposed measures were developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the Council meeting in June 2018. FMAT meetings were also open to the public. Public hearings will be held and provide addition opportunity for comment from the public, prior to the Council's decision to submit the document to NOAA Fisheries. In addition, the public will have further opportunity to comment on this amendment document when NOAA Fisheries publishes a request for comments notice in the Federal Register.

8.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes measures for setting measures to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. This action would also revise the process for specifying multi-year management measures, require periodic review of the excessive share cap level, and allow adjustments to the made under the frameworkable provisions of the FMP. In addition, this amendment may also consider revisions to some or all of the current management objectives for the Atlantic Surfclam and Ocean Quahog FMP. This document includes: A description of the alternatives considered, the preferred action and rationale for selection, and any changes to the implementing regulations of the FMP (if applicable). As such, this document enables the implementing agency (NMFS) to make a decision on implementation and this document serves as a supporting document for the proposed rule.

The action contained within this amendment document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during a number of public meetings (see section 8.6). In addition, the public will have further opportunity to comment on this amendment document once NMFS publishes a request for comments notice in the Federal Register.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g., Confidentiality of Statistics of the MSA; NOAA Administrative Order

216-100, Protection of Confidential Fisheries Statistics; 50 CFR §229.11, Confidentiality of information collected under the Marine Mammal Protection Act).

Objectivity of Information Product

The category of information product that applies here is "Natural Resource Plans." Section 8.0 describes how this document was developed to be consistent with any applicable laws, including MSA with any of the applicable National Standards. The analyses used to develop the alternatives (i.e., policy choices) are based upon the best scientific information available. The most up to date information was used to develop the EA which evaluates the impacts of those alternatives (see section 7.0). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the surfclam and ocean quahog fisheries.

The review process for this amendment document involves MAFMC, NEFSC, GARFO, and NMFS headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and non-economic social sciences. The MAFMC review process involves public meetings at which affected stakeholders have the opportunity to comments on proposed management measures. Review by GARFO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, and compliance with the applicable laws. Final approval of the amendment document and clearance of the rule is conducted by staff at NMFS Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.8 Paperwork Reduction Act

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

8.9 Impacts of the Plan Relative to Federalism/EO 13132

This document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

8.10 Regulatory Impact Review / Initial Regulatory Flexibility Analysis

[This section will be completed prior to submission to the NMFS].

However, during the public hearings for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, we are seeking industry and public input in categorizing current allocation holders by matching allocation holders using the industries described in the North American

Industry Classification System Codes (NAICS) for the purpose of conduction the Regulatory Flexibility Analysis (RFA).

The NAICS codes are used to categorize businesses by industry description (e.g., commercial harvester, processor, bank, for-hire vessel). As an example, the SBA defines a small business in the commercial fishing industry as a firm with total annual receipts (gross revenues) not in excess of $11.0 million. A small business in the recreational for-hire fishery is a firm with receipts of up to $7.5 million.

The FMAT used the Small Business Administration table of Small Business Size Standards matched to the NAICS Codes to categorize current surfclam and ocean quahog allocations holders (See Tables X and Y below) and seeks industry and public input on the categorizations made or any missing information. This data will be used when finalizing the analysis in this section once the Council selects the prefer alternative.

The NOAA Fisheries requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new FMP or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses many items in the regulatory philosophy and principles of EO 12866.

The Regulatory Flexibility Act (RFA) requires the Federal rulemaker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. In reviewing the potential impacts of proposed regulations, the agency must either certify that the rule "will not, if promulgated, have a significant economic impact on a substantial number of small entities." As indicated in section 5.0, the proposed actions in this document would implement measures to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges, measures that facilitate for the periodic review of any implemented excessive cap level, measures that facilitate revisions to the process for specifying multi-year management measures, and measures that allow modifications to the excessive shares cap level via framework actions. An Initial Regulatory Flexibility Analysis (IRFA) will be prepared to further evaluate the economic impacts of the various alternatives presented once the Council has identified preferred alternatives. This analysis supports a more thorough analysis (RFA Analysis) which will be completed.

Table X. SBA classification for 2017 ocean quahog allocation owners of record.

SBA Code	Size Standard in Millions	SBA Classification	Alloc. #	Owner of Record	Street	City	State
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q667	Bumble Bee Foods LLC c/o Gabriel Montesano	280 10th Ave	San Diego	CA
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q649	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	Q664	TD Bank NA Attn: David Nilsen, Sr. Vice President	1101 Hooper Ave	Toms River	NJ
522110	$550 million in assets	Commercial Banking	Q691	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
522130	$550 million in assets	Credit Unions	Q690	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ
?	?	?	Q684	ITQ LLC	PO Box 727	Manahawkin	NJ
?	?	?	Q199	Legend Inc	607 Seashore Rd	Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q112	Wando River Corporation c/o Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
114113	$11 million in revenues	Commercial fishing	Q194	John Kelleher C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
114113	$11 million in revenues	Commercial fishing	Q021	Atlantic Vessels of Delaware Inc	PO Box 178	Norfolk	VA

114113	$11 million in revenues	Commercial fishing	Q055	Kristy Lee Clam Co	PO Box 114	Newcomb	NY
114113	$11 million in revenues	Commercial fishing	Q629	LET Ventures Incorporated (Ellen W LLC)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q006	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
114113	$11 million in revenues	Commercial fishing	Q576	Foxy Investments Inc C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	Q609	M J Holding Co LLC	PO Box 114	Newcomb	NY
114113	$11 million in revenues	Commercial fishing	Q596	Atlantic Vessels Inc	PO Box 178	Norfolk	VA
114113	$11 million in revenues	Commercial fishing	Q115	LET Ventures Incorporated (Patti B Clam Ventures Inc)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q181	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
?	?	?	Q672	OSM Resources LLC	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q598	John W Kelleher Trust C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
?	?	?	Q676	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL

114113	$11 million in revenues	Commercial fishing	Q005	LET Ventures Incorporated (A & B Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q049	LET Ventures Incorporated (Sarah C Conway Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q128	LET Ventures Incorporated (F/V Ocean View Inc)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q109	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD
114113	$11 million in revenues	Commercial fishing	Q101	T & M Clammers Inc	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q193	Peter A LaMonica C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
?	?	?	Q107	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q174	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q084	LET Ventures Incorporated (B&B Shellfishing Inc)	PO Box 727	Manahawkin	NJ
?	?	?	Q685	NSR Resources LLC	PO Box 727	Manahawkin	NJ
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	Q016	George S Carmines In Trust	103 Rens Rd	Poquoson	VA
?	?	?	Q003	Adriatic Inc	10127 Keyser Point Road	Ocean City	MD

?	?	?	Q669	Kenneth W Bailey	PO Box 12	Heislerville	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q658	DC Air & Seafood Inc	PO Box 581	Winter Harbor	ME
?	?	?	Q056	Seafish Inc	10134 Waterview Dr	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	Q143	Shellfish Inc	PO Box 86	West Sayville	NY

Table Y. SBA classification for 2017 surfclam allocation owners of record.

SBA Code	Size Standard in Millions	SBA Classification	Alloc. #	Owner of Record	Street	City	State
?	?	?	C624	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
424460	100 employees	Fish and Seafood Merchant Wholesalers	C583	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	C632	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
522130	$550 million in assets	Credit Unions	C529	Farm Credit East, ACA Attn: Benjamin Thompson	240 South Rd	Enfield	CT
NA	Public Administration: Small business size standards are not established for this Sector. Establishments in the Public Administration Sector are Federal, state, and local government agencies which administer	Sector 92	C669	US DOC NOAA/NMFS Financial Services Division	55 Great Republic Dr	Gloucester	MA
NA		Sector 92	C666	US DOC NOAA/NMFS Financial Services Division ITF Michael and Danny NOAA ITQs	55 Great Republic Dr	Gloucester	MA

	and oversee government programs and activities that are not performed by private establishments.			Attn: James Plouffe			
?	?	?	C136	Stephanie Dee Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	C660	First Niagara Bank NA ITF DPL Niagara Enterprises LLC Attn: Terri Kratz	401 Plymouth Rd Ste 600	Plymouth Meeting	PA
114113?	$11 million in revenues?	Commercial fishing?	C009	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C188	Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
522110	$550 million in assets	Commercial Banking	C634	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
114113	$11 million in revenues	Commercial fishing	C074	Kristy Lee Clam Co	PO Box 114	Newcomb	NY
522130	$550 million in assets	Credit Unions	C546	Farm Credit East, ACA FBO JM & MT Attn: Benjamin Thompson	240 South Rd	Enfield	CT
114113	$11 million in revenues	Commercial fishing	C589	Yannis Karavia LLC C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
522130	$550 million in assets	Credit Unions	C627	Farm Credit East, ACA Attn: Scott Kenney	240 South Rd	Enfield	CT
424460	100 employees	Fish and Seafood Merchant Wholesalers	C540	George Torggler	921 Preserve Dr	Annapolis	MD
522130	$550 million in assets	Credit Unions	C662	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ

424460	100 employees	Fish and Seafood Merchant Wholesalers	C663	DPL ITQs LLC	PO Box 309	Millville	NJ
114113	$11 million in revenues	Commercial fishing	C528	LNA Inc	PO Box 178	Portsmouth	RI
114113?	$11 million in revenues?	Commercial fishing?	C146	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	C026	George S Carmines In Trust	103 Rens Rd	Poquoson	VA
522130	$550 million in assets	Credit Unions	C547	Farm Credit East, ACA FBO LET Attn: Benjamin Thompson	240 South Rd	Enfield	CT
?	?	?	C004	Adriatic Inc	10127 Keyser Point Road	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C642	CCCFA Inc Attn: Seth Rolbein	1566 Main St	Chatham	MA
114113	$11 million in revenues	Commercial fishing	C563	LET Ventures Incorporated (Ellen W LLC)	PO Box 727	Manahawkin	NJ
NA	Public Administration: Small business size standards are not established for this Sector. Establishments in the Public Administration Sector are Federal, state, and local government agencies which administer and oversee government programs and activities that are not performed by private establishments.	Sector 92	C674	US DOC NOAA/NMFS Financial Services Division ITF LaVecchia and LaVecchia LLC Attn: James Plouffe	55 Great Republic Dr	Gloucester	MA
114113	$11 million in revenues	Commercial fishing	C110	LET Ventures Incorporated (F/V Ocean Bird Inc)	PO Box 727	Manahawkin	NJ

?	?	?	C133	City of Southport Inc	854 Tern Ln Apt 103	Salisbury	MD
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	C552	M J Holding Co LLC	PO Box 114	Newcomb	NY
?	?	?	C664	Faye Y Watson	10222 Golf Course Rd	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C065	LET Ventures Incorporated (Sarah C Conway Inc)	PO Box 727	Manahawkin	NJ
?	?	?	C166	Nantucket Shoals Inc Attn: Albert C Rosinha Jr	147 Pine St	Rochester	MA
522110	$550 million in assets	Commercial Banking	C559	Sturdy Savings Bank (P & E) Attn: Commercial Loans	PO Box 900	Cape May Court House	NJ
522110	$550 million in assets	Commercial Banking	C655	Audubon Savings Bank ITF Cape Cod of Maryland Inc Attn: Letitia C. Baum, Senior Vice President	515 S White Horse Pike	Audubon	NJ
114113	$11 million in revenues	Commercial fishing	C007	LET Ventures Incorporated (A & B Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C046	LET Ventures Incorporated (B & D Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C215	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ
?	?	?	C189	Anthony W Watson	10232 Golf Course Rd	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C151	LET Ventures Incorporated	PO Box 727	Manahawkin	NJ

				(Patti B Clam Ventures Inc)			
?	?	?	C080	TMT Allocations Inc (Leprechaun Inc)	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C454	LET Ventures Incorporated (Leroy E Truex)	PO Box 727	Manahawkin	NJ
?	?	?	C584	Mabel Susan III Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C099	Mabel Kim Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C033	Big Diamond Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C201	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD
114113	$11 million in revenues	Commercial fishing	C561	Roy Osmundsen	14 Whippoorwill Ln	Cape May Court House	NJ
114113	$11 million in revenues	Commercial fishing	C134	LET Ventures Incorporated (Starlight Comm Fish Inc)	PO Box 727	Manahawkin	NJ
?	?	?	C8270	Jacek Kubiak	8 Cove Dr	North Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C149	Wando River Corporation c/o Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
424460	100 employees	Fish and Seafood Merchant Wholesalers	C568	Daniel M Cohen	985 Ocean Dr	Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C515	Dolores Truex	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C127	Gary Osmundsen	12 Rabbit Run	Cape May	NJ
114113	$11 million in revenues	Commercial fishing	C135	T & M Clammers Inc	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C079	Lauren Kim Inc	12 Rabbit Run	Cape May	NJ

522130	$550 million in assets	Credit Unions	C656	Farm Credit East, ACA Attn: David A Bishop	2 Constitution Dr	Bedford	NH
?	?	?	C560	Mary Patricia Price	540 Hidden Pines Blvd	New Smyrna Beach	FL
?	?	?	C613	NSR Resources LLC	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C638	Vongole Ragazzi LLC	48 Gorton Rd	Millville	NJ
?	?	?	C229	Kenneth W and Sharon L Bailey	PO Box 12	Heislerville	NJ
114112	$11 million in revenues	Commercial fishing	C008	LET Ventures Incorporated (F/V Amanda Tara Inc)	PO Box 727	Manahawkin	NJ
522130	$550 million in assets	Credit Unions	C661	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ
114113	$11 million in revenues	Commercial fishing	C071	Wyoming Boat Corporation	12 Rabbit Run	Cape May	NJ
?	?	?	C075	Seafish Inc	10134 Waterview Dr	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C063	T & P Vessel Inc	210 Hagen Rd	Cape May Court House	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C629	New Sea Rover Inc ITF Blount Seafood Corporation	114 Willow Dr	Cape May	NJ
114112	$11 million in revenues	Commercial fishing	C637	F/V Maude Platt Inc	515 Sanford Rd	Westport	MA
114113	$11 million in revenues	Commercial fishing	C011	D & L Commercial Fish Inc	PO Box 727	Manahawkin	NJ

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10.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this document, the Council consulted with NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. To ensure compliance with NMFS formatting requirements, the advice of NMFS GARFO personnel was sought.

**Copies of this document are available from Dr. Christopher M. Moore, Executive Director,
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Appendix A

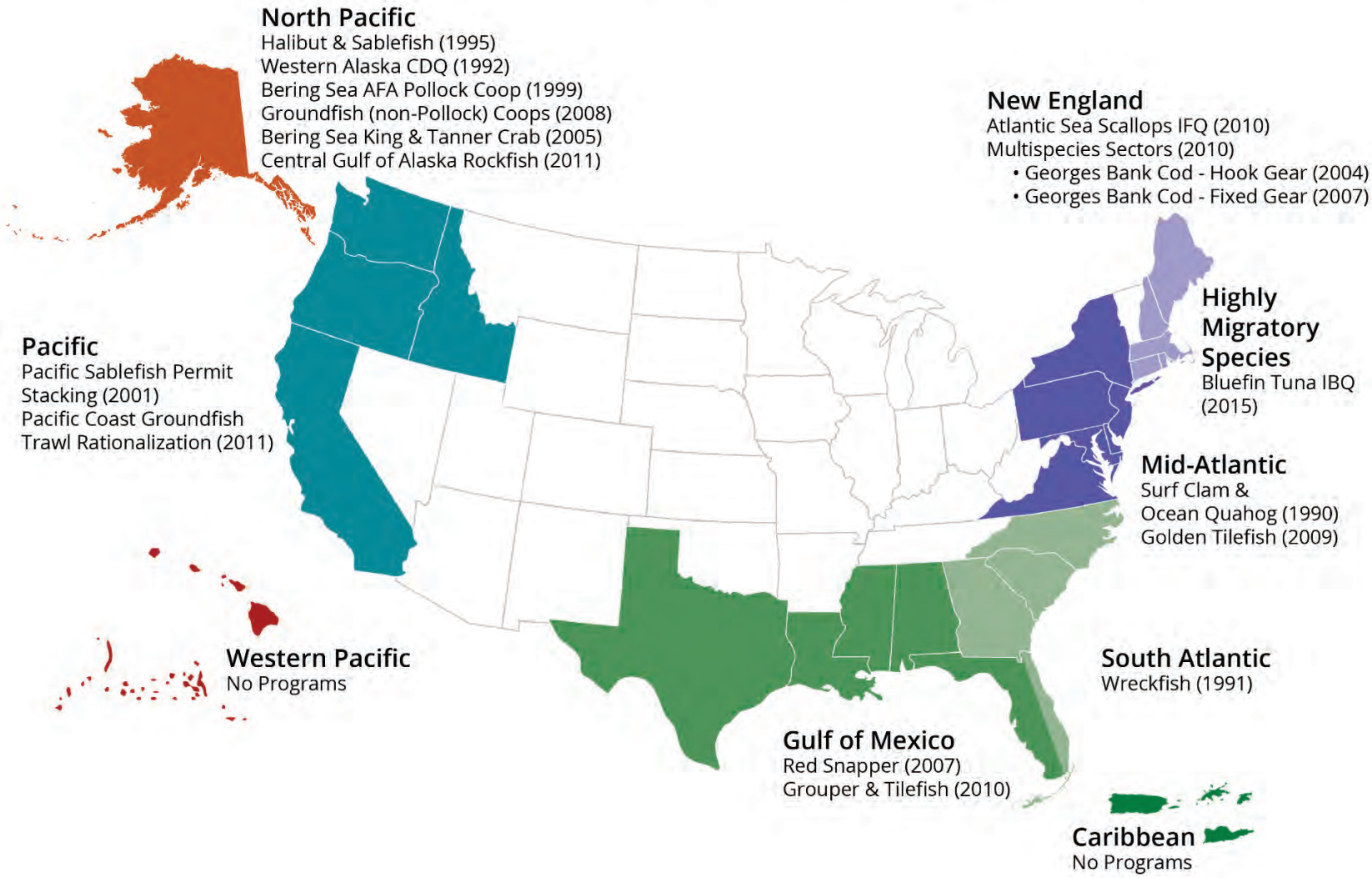
Catch Shares programs in the USA

"Catch shares" is a general term associated with several fisheries management strategies that dedicate a secure share of fish to individual fishermen, cooperatives, or fishing communities for their exclusive use. This appendix presents information on the geographic distribution of the 16 Catch Shares Programs throughout the country. In addition, this appendix provides a brief summary of how these programs are managed.[55]

The information presented below was provided by Lindsay Fullenkamp (NOAA) and Wendy Morrison (NOAA).

[55] For additional information please visit: https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares.

Current Catch Shares Programs



Program	Excessive Share Cap
Atlantic Sea Scallops IFQ	Yes. 2.5% of annual quota pounds[56]; 5% cap on quota share[57]
Multispecies Sectors	Yes. No individual or entity can hold more than 5% of all limited access groundfish permits. Additionally, there is a limit on the aggregated average of all allocated groundfish stocks of 15.5 Potential Sector Contribution (PSC). (Each permit has a history that brings a percentage of quota to the sector the permit enrolls with.) An entity can hold PSC for a single stock in excess of 15.5%, so long as the total holdings do not exceed 232.5 PSC for all 15 species. In other words, because there are 15 groundfish stocks currently allocated to the fishery, the total PSC across all stocks used by a permit holder cannot exceed 232.5 PSC (an average PSC of 15.5% per stock multiplied by 15 groundfish stocks).
Bluefin Tuna IBQ	No. The IBQ program is designed to account for bycatch in directed pelagic longline fisheries. There are various measures in place to curtail the excessive accumulation of share or allocation, such as no permanent sales and all leases contained within the calendar year.
Surf Clam & Ocean Quahog	No
Golden Tilefish	Yes, 49% of the tilefish IFQ total allowable landings
Wreckfish	Yes, 49% of quota share
Red Snapper	Yes, 6% of quota share
Grouper & Tilefish	Yes, quota share caps are: deep water grouper 14.7%, gag 2.3%, other shallow water grouper 7.3%, red grouper 4.3%, and tilefish 12.2%
Pacific Sablefish Permit Stacking	Yes, no individual can hold more than three permits unless meet requirements of grandfather clause.
Pacific Coast Groundfish Trawl Rationalization	Yes - For IFQ, quota share limits and quota pound vessel limits (annual and daily). Limits vary by species. The 30+ categories can be found here: http://www.westcoast.fisheries.noaa.gov/publications/fishery_management/trawl_program/accumulation-limits.pdf. - For the mothership cooperative program, mothership permit usage limit (no more than 45% of sector allocation). Mothership catcher vessel endorsed permit ownership limit (no more than 20% of the sector allocation).

[56] Quota pounds is the annual amount of fish a participant is allowed to catch, usually defined in terms of total weight. It is often calculated as a percentage of the commercial quota based on a participant's quota shares. It varies according to changes in the commercial quota over time.

[57] Quota share is the percentage of the sector's catch limit to which the holder of quota shares has access to harvest. This percentage is used to calculate the annual allocation, and it is not affected by changes in the catch limit over time.

Halibut & Sablefish	Yes. No one can hold or control more than 0.5%-1.5% of the halibut or sablefish quota shares in various combinations of areas (Gulf of Alaska, Bering Sea, and Aleutians) unless grandfathered in based on original landings history. There are similar restrictions on the amounts of IFQ that can be used on any single vessel.
Western Alaska CDQ	No. The Bering Sea King and Tanner Crab and Halibut Sablefish IFQ have limits on CDQ holdings, but there are no specific excessive share limits in the CDQ Program itself because the allocations were specified by Congress. However, the percentage allocated is reviewed every 10 years.
Bering Sea AFA Pollock Coop	Yes. No entity can harvest more than 17.5% or process more than 30% of the pollock directed fishery allocation.
Groundfish (non-Pollock Coops)	Yes. No single person can hold or use more than 30% of the quota share, unless grandfathered; no single vessel may catch more than 20% of the initial TAC assigned to the non-AFA trawl catcher/processor sector in any given year.
Bering Sea King & Tanner Crab	Yes. No individual or entity may hold/use more than 1-20% of shares (varies by fishery) unless grandfathered. Processors may not possess or use more than 30% of the processor shares for each fishery unless grandfathered, with some limited exceptions for specific fisheries and entities.
Central Gulf of Alaska Rockfish	Yes. There are four types of use caps to limit the amount of rockfish quota share and cooperative fishing quota, unless grandfathered. The caps can be found in Table 1 here: https://alaskafisheries.noaa.gov/sites/default/files/rockfish-faq.pdf

Appendix B

Synthesis Document for

Review of Goals and Objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan

October 2017

Prepared by the Fisheries Leadership & Sustainability Forum

Contents

1 Context for revising goals and objectives

1.1 Project overview

The Council is reviewing and potentially revising goals and objectives for the Surfclam and Ocean Quahog (SCOQ) Fishery Management Plan (FMP) in support of the Council's 2014-2018 Strategic Plan and 2017 Implementation Plan, which identified reviewing and updating FMP goals and objectives as a priority. This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they provide meaningful guidance and are consistent with today's fisheries and management context. The Council will follow a similar process to update goals and objectives for all FMPs.

The Council contracted with the Fisheries Leadership & Sustainability Forum (Fisheries Forum) to support this work by developing a process to support the Council's discussion. Between April and July 2017, Fisheries Forum staff conducted planning conversations with members of the Council's SCOQ Committee, SCOQ Advisory Panel (AP), and additional state agency representatives from states engaged in the fisheries. The Fisheries Forum also reviewed comments provided by the public during scoping hearings held in July 2017.

The Fisheries Forum synthesized this feedback to identify the major ideas and themes of discussion. The Council's Surfclam and Ocean Quahog Fishery Management Action Team (FMAT) reviewed this information and provided recommendations to help guide the Council's discussion. This document combines the Fisheries Forum's synthesis of feedback and the FMAT's recommendations. This information is intended to help frame and focus the Council's review of goals and objectives, and is not intended to be comprehensive of all ideas and perspectives.

The Council will discuss SCOQ FMP goals and objectives at the October 2017 Council meeting (October 10-12, 2017 in Riverhead, New York). At this time, the Council may adopt revisions to SCOQ FMP goals and objectives for inclusion in a public hearing document. The Council and public will have additional opportunities to provide input on this issue.

1.2 Original FMP objectives

The current FMP objectives were adopted in 1988 through Amendment 8 to the SCOQ FMP.

1. Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

1.3 Terms: Goals, objectives, and strategies

As part of the Council's discussion and review of goals and objectives, it will be important to consider the appropriate terminology.

- Goals are broad, big picture, and aspirational. They can help communicate high-level values and priorities for SCOQ management.
- Objectives are more specific and actionable. They can help describe important steps toward accomplishing goals.
- Strategies refer to specific processes, decision points, and actions the Council may take to achieve objectives and support goals.

Goals and objectives are appropriate for the Council's discussion; however, specific management strategies would be appropriate to discuss in the context of other Council actions and will not be part of this discussion. Appendix 2 includes additional examples to help demonstrate the difference between goals, objectives, and strategies.

The four current SCOQ FMP objectives are described in Amendment 8 as objectives and not goals. Other Council FMPs include a combination of goals and objectives. Appendix 3 includes goals and objectives from all Mid-Atlantic FMPs. The Council could choose to consider structuring guidance for the SCOQ FMP in terms of goals, objectives, or both. The FMAT's recommendation includes a set of five goal statements with optional objectives for the Council's consideration.

1.4 MAFMC Strategic Plan

The Council's review of SCOQ FMP goals and objectives supports the Council's Strategic Plan and the 2017 Implementation Plan. The Council's 2014-2018 Strategic Plan identifies reviewing and updating FMP goals and objectives as a priority:

Management Goal: Develop fishery management strategies that provide for productive, sustainable fisheries.

Objective 11: Evaluate the Council's fishery management plans

Strategy 11.2: Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable.

The Council's 2017 Implementation Plan has a list of proposed deliverables including "Review and revise FMP goals and objectives" for the SCOQ FMP.

1.5 Scoping questions

The following questions were included in the Council's July 2017 Scoping Guide for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment to elicit feedback on SCOQ FMP goals and objectives. (The Excessive Shares Amendment will consider excessive shares and FMP goals and objectives as two separate issues.)

- Are the existing objectives appropriate for managing the surfclam and ocean quahog fisheries?

- Are there any objectives that appear outdated or do not reflect the way these fisheries are managed today? If so, how could they be updated?
- Is the intent of each objective clear? If not, how could they be reworded or clarified?
- Should any new goals and/or objectives be added?
- What else should the Council consider during the process of reviewing the objectives for the SCOQ FMP?

2 Feedback on goals and objectives

This section provides an overview of ideas and feedback to help inform the Council's review of SCOQ FMP goals and objectives. Contributors include members of the Council's SCOQ Committee and AP, additional state representatives from states engaged in the fisheries, and stakeholders who provided comments during the Council's July 2017 scoping hearings. Contributors commented briefly on the use of goals and objectives. Additional feedback focused on three themes: 1) relevance of the current objectives, 2) opportunities for revisions, and 3) other issues that may be pertinent to goals and objectives, including Council priorities and unique aspects of the surfclam and ocean quahog fisheries.

2.1 Use of goals and objectives

Managers and advisors who contributed to this project shared the following ideas related to the use of FMP goals and objectives. Most managers and advisors do not refer back to goals and objectives on a regular basis, if at all, but felt they have an important role in the FMP.

Purpose: Goals and objectives provide high level guidance or the "ground rules" for a fishery to ensure it is managed sustainably. Managers and advisors described goals and objectives as foundational to the FMP (e.g., the "blueprint", the "benchmark", the National Standards of the FMP) and the Council's message to the public and industry about how it intends to manage the SCOQ fisheries. Goals and objectives need to be long term and flexible to accommodate changing conditions.

Time horizon: Goals are meant to be long term; objectives are shorter term and a measure of the effectiveness of the set goals. Managers and advisors felt that goals and objectives need to be set for the long term to provide stability and allow the industry to make business decisions. Goals and objectives should also provide managers and the industry with short-term flexibility to address challenges and changing conditions. The appropriate time horizon for goals and objectives can also depend on the circumstances of a fishery and what is needed.

Audience: The intended audience for goals and objectives is a large group that includes the Council, NOAA Fisheries, industry, interested stakeholders, state agencies, non-governmental organizations, and consumers.

2.2 Relevance of the current objectives

Many contributors felt that the current FMP objectives continue to remain relevant and provide meaningful guidance despite significant changes in the surfclam and ocean quahog fisheries. Contributors shared the following reasons why they felt that the current objectives are relevant and appropriate in their current form.

Flexibility: Contributors felt that the objectives have remained relevant through significant biological changes to the SCOQ resources and regulatory changes to the fisheries. They described seeing changes including a shift in the center of biomass to the north, a decrease in fishing activity in the southern end of the range, encountering surfclams among ocean quahogs in deeper water, fleet consolidation after implementation of the Individual Transferable Quota (ITQ) system, and improvements to the science and research supporting management of the SCOQ resources. Contributors felt that the current objectives are sufficiently flexible to accommodate future changes.

Process and intent: Some contributors described their high regard for the wording and intent of the current set of objectives and the process that was originally followed to develop them, as well as their respect for the people who participated.

Performance: Contributors feel that management is working well, that the current objectives are being achieved, and that these objectives define one of the most successfully managed fisheries in the U.S. The objectives reflect the current social and economic circumstances of the fisheries and have minimized government and industry costs. In particular contributors noted that the stock is rebuilt, harvest rates are stable, management uncertainty is low, short-term economic dislocations have been minimized, and regulatory requirements are simplified. Some contributors also noted that safety has been improved.

Stability and consistency: Contributors feel that the current objectives and adoption of the ITQ program have allowed the industry to make efficient planning and business decisions.

Relationships and process: Contributors feel that the current objectives support an efficient and cooperative relationship between the Council, NOAA Fisheries, and industry.

Overall, contributors felt the fisheries are managed well and these original FMP objectives are still relevant. Some felt no changes or updates are necessary to the current objectives, while others felt a refresh and/or some minor wording updates could be helpful to modernize them.

2.3 Opportunities for revisions

Although contributors generally felt that the current SCOQ FMP objectives are still relevant, many suggested opportunities for revisions to ensure that objectives provide meaningful guidance, are clearly worded, and are consistent with the way the fisheries and the Council currently operate. These opportunities include minor wording adjustments as well as more comprehensive structural and content-related revisions.

2.3.1 Minor revisions

The following section describes opportunities identified by contributors for the Council to adjust, update, or clarify specific terms within each objective while preserving its intent. Contributors felt that objectives should be clearly worded to ensure that their intent is clear to managers, stakeholders, and enforcement.

Objective 1
Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.

- Update the objective: The Council could update this objective to reflect the need to maintain rather than “rebuild” the surfclam and ocean quahog resources, which are not overfished or undergoing overfishing. Many contributors felt “rebuild” is an outdated term and that refreshing this objective would acknowledge the progress made and that the SCOQ resources are sustainably managed.
- Clarify specific terms: Some felt it could be helpful to clarify some of the terms in this objective including “stabilizing” and “economic dislocations”. For example, harvest rates are stable and

the quota has been the same for years, so "stabilizing" may be a term that is more reflective of the fisheries in previous years.
- Other considerations: Some felt this objective could take the longevity of the species into consideration.

Objective 2

Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.

- Wording: This objective could acknowledge other relevant aspects of managing the fisheries, such as monitoring.
- Update the objective: Many felt management of the SCOQ fisheries is straightforward and simple, and that this objective might reflect a time when management was more complicated. The Council could update this objective, for example, to focus on maintaining current regulatory requirements.

Objective 3

Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.

- Update the objective: The current objective refers to "bringing harvest capacity into balance", however, contributors felt that harvesting capacity is in alignment with processing and biological capacity in the sustainable SCOQ fisheries. This portion of the objective could be updated to reflect the current fisheries and status of the resources.
- Clarify specific terms: Some weren't clear on the meaning of "economic efficiency" in this objective.

Objective 4

Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

- Clarify specific terms: Some contributors weren't sure what is meant by "unanticipated short term events" because there are not a lot of sudden changes in these fisheries and they are not aware of disruptions or destabilizing events that could occur in today's fisheries. However, some thought that changing environmental conditions could be considered an unanticipated event that could be reflected in this objective.

2.3.2 Structural and content revisions

In addition to the minor revisions above, some contributors felt that there are opportunities for the Council to make more significant structural and/or content-related revisions, ranging from minor to comprehensive changes to the existing objectives. (There may not be a clear delineation between "minor" and "significant" revisions, given that multiple minor revisions to one objective could result in substantial changes).

Order: The objectives could be ordered in terms of importance or priority.

Structure: Objectives could be combined or reorganized. For example, contributors noted that current objectives 3 and 4 both address industry operations.

Comprehensive revisions: The objectives could be completely revised. One example of a complete new set of goals and objectives was provided during the Council's July scoping hearings and is included as appendix to this document (Appendix 4: Example of revised goals and objectives provided by Bumble Bee Seafoods).

2.4 Other issues

The Council could consider how goals and objectives intersect with other Council priorities and unique aspects of the SCOQ resources and fisheries. Contributors identified several topics that are relevant to the SCOQ fisheries and could be relevant to a review of goals and objectives.

Ecosystem and habitat considerations: Implementation of the Council's Ecosystem Approach to Fisheries Management (EAFM) and effective use of the Essential Fish Habitat (EFH) authorities are Council priorities.

Climate and ecosystem changes: Some contributors are concerned about the impacts of ocean acidification to the long-lived, sessile surfclam and ocean quahog resources and feel that the fisheries need to remain adaptable to changing environmental conditions.

Scientific advances: Supporting advances in fishery-independent data collection and modeling that reflect the unique biology of surfclams and ocean quahogs helps to enhance the effective management of the SCOQ resources.

Changes to the fisheries: Contributors commented about the fisheries (both the biomass and fishing activity) shifting north into the geographical bounds of the New England Fishery Management Council and issues with accessible areas in New England due to the Omnibus Habitat Amendment.

Contributors noted other attributes of the fisheries that could be reflected in revised goals and objectives, including surfclams and ocean quahogs being a safe, high quality product. The longevity of the species is another unique attribute. Some also noted the importance of continuing to improve understanding of the resources, fisheries, and dependent communities, and the shared role of managers, industry, and science in the sustainable management of the SCOQ fisheries.

3 FMAT recommendation development

3.1 Context for FMAT recommendations

3.1.1 Outcomes from FMAT discussion

The Surfclam and Ocean Quahog FMAT convened via webinar on September 20, 2017, to consider the feedback obtained from planning conversations and scoping hearings, and to provide recommendations to help guide the Council's review of FMP goals and objectives. The FMAT recognizes that the Council will consider a range of possible options including:

- Making no changes to the current objectives
- Making minor changes or wording adjustments to the current objectives
- Making significant changes to the current objectives
- Developing a new set of revised objectives

The FMAT's discussion resulted in two outcomes to help support the Council's consideration of these options. The FMAT recommends that the Council discuss these two outcomes and determine how to proceed.

> Outcome 1: Discussion questions
> The FMAT developed a set of discussion questions (Section 3.2.1) to help guide the Council's discussion of SCOQ FMP goals and objectives and consideration of the options above.
>
> Outcome 2: Revised goals and objectives
> The FMAT recommended a set of goal statements and objectives (Section 3.2.2) for the Council's consideration of revised goals and/or objectives.

3.1.2 Rationale for FMAT recommendations

The FMAT developed Outcomes 1 and 2 after considering the guidance provided by the Council's 2014-2018 Strategic Plan (Section 1.4), the discussion questions used to elicit feedback from the public during the July 2017 scoping hearings (Section 1.5), and the feedback obtained from planning conversations and public comment (Section 2). The FMAT concluded that while the current SCOQ FMP objectives were carefully considered at the time they were developed, they should be revised to provide more useful guidance to the Council for the following reasons.

Acknowledge achievement and success. The current SCOQ FMP objectives reflect the intended and desired outcomes of Amendment 8. Aspects of these objectives have already been achieved. Revising FMP goals and objectives would acknowledge the improvements that have been made to the management of the SCOQ fisheries, recognize what is working well, and focus on maintaining and sustaining these improvements.

Clarify intent. Goals and objectives are an important public statement about what an FMP is trying to accomplish, and should be clear to stakeholders of all backgrounds. The current objectives and specific terms may not be clear to those who were not involved in the management process at the time

Amendment 8 was developed. Terms may also be confusing because they are not defined or have multiple definitions (e.g., economic efficiency). In addition, the current objectives are complicated and combine topics (e.g., Objective 1 addresses biology and economics). Revising goals and objectives would simplify and focus this guidance to clarify the Council's intent while still acknowledging the need to balance different objectives.

Provide flexible long-term guidance. The current SCOQ FMP objectives are short-term and focus on implementation of the ITQ program. Revising goals and objectives is an opportunity for the Council to develop broad, high-level guidance that describes the Council's longer-term intent for the fisheries, and is flexible to remain relevant over time and through changes to the fisheries.

Clearly identify FMP-level guidance. In addition to setting FMP goals and objectives, the Council may identify goals and/or objectives for specific amendments. For example, the Council identified objectives for Amendment 10 to the SCOQ FMP in 1998 (see Question 6 below). Furthermore, fisheries and FMPs evolve over time, and this can lead to a disconnect between the stated goals and/or objectives for an FMP and the way a fishery currently operates. Through the process of reviewing and revising FMP goals and objectives, the Council should clearly identify FMP-level guidance that is intended to carry forward through future Council actions, and ensure that this guidance reflects the current state of a fishery.

3.2 FMAT recommendations

3.2.1 Outcome 1: Discussion questions

The FMAT identified several discussion questions that may help inform the Council's consideration of goals and objectives for the SCOQ FMP.

Question 1: How does the Council want to structure guidance for the SCOQ FMP?
The Council could choose to structure guidance for the SCOQ FMP in the form of goals, objectives, or both. The FMAT feels that goals would provide valuable long-term guidance, but notes that this is an important structural consideration for the Council to discuss. The FMAT's recommendations include both goals and objectives but the FMAT could provide these in a different format.

Question 2: What does the Council view as the time frame for goals and objectives?
Time frame is an important consideration related to Question 1. Goals and objectives for biological sustainability may be essentially permanent, but other guidance may need to be adjusted over time. The FMAT suggests the Council consider the time frame for long-term guidance, how frequently the Council is likely to revisit FMP goals and objectives, and whether reviews are likely to occur as needed or on a set schedule. The FMAT considered how frequently the Council might revisit goals and objectives (for example, every 10 years, with every other iteration of the Council's Strategic Plan, or in conjunction with ITQ reviews) though did not endorse or recommend a time frame for review.

Question 3: What is the Council's intent for reviewing and potentially revising goals and objectives?
The FMAT suggests the Council consider whether goals and objectives are meant to maintain the current state of the fisheries or look ahead to the future. The FMAT's recommendations for revised goals and objectives (Section 3.2.2) reflect the current fisheries; the development of

forward-looking goals and/or objectives that imply change to the fisheries would be the purview of the Council.

Question 4: How could the Council's review of FMP goals and objectives acknowledge what is working well in the SCOQ fisheries?

Feedback from planning conversations and public comments emphasized that the current objectives are still viewed as relevant and that the fisheries are performing well, though opinions differed on whether the current objectives should be revised. The FMAT felt that revising goals and objectives would refocus FMP guidance and acknowledge improvements to the fisheries that should be maintained. The Council should consider how FMP goals and objectives can most effectively acknowledge what is working well in the SCOQ fisheries.

Question 5: How does the Council want to address measuring the performance of FMP goals and objectives?

The Council's 2014-2018 Strategic Plan states: *Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable*. The FMAT suggests that the Council discuss this issue. In the future, the Council could request that FMATs give further consideration to measuring the performance of goals and objectives. Some FMAT members indicated that the goals recommended in Section 3.2.2 could be measured using quantitative and/or qualitative metrics.

Question 6: Does the Council want to acknowledge the Maine mahogany quahog fishery in FMP goals and objectives?

Amendment 10 to the SCOQ FMP in 1998 recognizes and provides for the continuation of a small fishery for ocean quahogs in federal waters off the state of Maine. Amendment 10 recognizes the overall objectives of the SCOQ FMP established by Amendment 8 and specifies an additional set of objectives[1]. The FMAT suggests that the Council consider whether this fishery should be acknowledged in overall FMP objectives. The FMAT also notes that the existence of amendment-specific objectives reinforces the need to clearly identify overall FMP objectives as guidance that should be carried forward into future actions.

Question 7: If the Council chooses to consider the draft goals and objectives proposed by the FMAT (Outcome 2), is the wording appropriate?

The FMAT and members of the public noted that the wording of goals and objectives is very important. The FMAT suggests the Council carefully consider the wording of each proposed goal and objective, possible interpretations and consequences, and the balance among goals and objectives as a whole.

[1] The additional objectives specifically for Amendment 10 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP) are:

1. Protect the public health and safety by the continuation of the State of Maine's PSP (Paralytic Shellfish Poisoning) monitoring program for ocean quahogs harvested from the historical eastern Maine fishery.
2. Conserve the historical eastern Maine portion of the ocean quahog resource.
3. Provide a framework that will allow the continuation of the eastern Maine artisanal fishery for ocean quahogs.
4. Provide a mechanism and process by which industry participants can work cooperatively with Federal and State management agencies to determine the future of the historical eastern Maine fishery.

3.2.2 Outcome 2: Revised goals and objectives

The FMAT developed the following goal statements, optional objectives, and questions for the Council's consideration. These goals are derived from the existing SCOQ FMP objectives, statutory requirements of the Magnuson-Stevens Act (MSA), and feedback from planning conversations and public comment; and are reframed as overarching long-term aspirations. The FMAT notes that several long-term goals are embedded within the current SCOQ FMP objectives. The proposed goals and objectives are an effort to distinguish between longer-term goals and shorter-term objectives, simplify and clarify the wording and intent of the current objectives, and provide meaningful long-term guidance. The FMAT believes that the proposed goals are longer-term and would not need to be revised frequently. The objectives, though shorter-term, describe ongoing practices to maintain rather than action items to be completed.

This section includes a summary of the five goals and supporting objectives recommended by the FMAT, followed by a discussion of the FMAT's rationale for each proposed objective and an explanation of how the proposed goal and/or objectives relate to the current FMP objectives (e.g., an update, reorganization, or new content).

Summary of revised goals and objectives

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.
- Objective 2.1: Promote compatible regulations between state and federal entities.
- Objective 2.2: Promote coordination with the New England Fishery Management Council.
- Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.
- Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.
- Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.
- Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.
- Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

Goal 1: Biological sustainability

> Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

FMAT Discussion

Goal 1 is an update and simplification of the "conserve and rebuild" language from current Objective 1 (*Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.*) This revision reflects the current status of the stocks, which are not overfished, undergoing overfishing, or undergoing rebuilding; and is versatile to provide guidance under all resource scenarios. This goal and the two objectives are consistent with the requirements of the MSA and are worded in a way that is more straightforward and understandable to the public.

The Council's recent review of summer flounder FMP goals and objectives may provide useful context for this proposed goal. The Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) considered a similarly worded goal for biological sustainability during their December 2015 review of summer flounder FMP goals and objectives, as part of the Comprehensive Summer Flounder Amendment. The FMAT for this amendment initially recommended a goal ("Ensure the biological sustainability of the summer flounder resource in order to maintain a sustainable summer flounder fishery") paired with two objectives ("Achieve and maintain a sustainable spawning stock biomass" and "Achieve and maintain a sustainable rate of fishing mortality.") The Council and Board recommended merging the two proposed objectives into a single objective that draws on the language of National Standard 1 to specifically address the topics of yield and avoiding overfishing, as follows: "Prevent overfishing, and achieve and maintain sustainable spawning stock biomass levels that promote optimum yield in the fishery." This proposed wording also builds on one of the original objectives for the FMP (Objective 3: Improve the yield from the fishery.) The Comprehensive Summer Flounder Amendment is ongoing and goals and objectives for this FMP have not yet been finalized.

Questions

- Does the Council want to develop one or more objectives related to this goal? For example, objectives could include "Maintain a sustainable biomass" and "Maintain a sustainable rate of fishing mortality." The FMAT notes that these objectives could reinforce and make explicit what is required by the MSA, though the FMAT feels adding objectives is not necessary.
- The Maine mahogany quahog fishery was developed after the current objectives were established. Does the Council want to explicitly acknowledge the Maine mahogany quahog fishery in goals and objectives? If so, where is the appropriate place to do so? An optional objective could read: Maintain the Maine mahogany quahog fishery.

Goal 2: Simplicity and efficiency

> Goal 2: Maintain a simple and efficient management regime.
> Objective 2.1: Promote compatible regulations between state and federal entities.
> Objective 2.2: Promote coordination with the New England Fishery Management Council.
> Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

FMAT Discussion

Goal 2 is a simplification and reorganization of the language in current Objective 2 (*Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.*) The words "maintain" and "promote" recognize that these aspects of managing the fisheries have been improved over time.

Objectives 2.1 and 2.2 are new ideas. The FMAT felt that promoting compatibility between state and federal regulations (Objective 2.1) is important "common sense" guidance for supporting simple and efficient management. Objective 2.2 was added in response to planning conversations and public comments and refers to the Council's interest in coordinating and having a presence when the New England Council develops management measures that may impact the SCOQ fisheries.

Questions

Current Objective 2 recognizes specific aspects of the management process for which managers should minimize the government and private cost of administering and complying with requirements. These include regulatory, reporting, enforcement, and research requirements.

- Does the Council want to continue to recognize these specific requirements, for example by adding them to Objective 2.3?

Goal 3: Stability

> Goal 3: Manage for stability in the fisheries.
> Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

FMAT Discussion

This goal is a simplification and reorganization that focuses on the overarching value of stability by drawing on the language of two current objectives, Objective 3 (*Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry*) and Objective 4 (*Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.*) Specifically, this overarching goal of stability addresses

the language of Objectives 3 and 4 referring to balancing harvesting, processing, and biological capacity; efficient utilization of capital resources, and long-term industry planning and investment needs.

The FMAT discussed the most appropriate terminology to describe stakeholders in the management of the surfclam and ocean quahog resources. FMAT members noted that the current objectives use the terms "industry" and "industry participants" and refer to both the harvesting and processing sectors. The FMAT also discussed whether the term "industry" explicitly includes the processing sector, and the relationship of the Council's management decisions to the processing sector. The FMAT suggested the phrase "surfclam and ocean quahog fisheries and fishing communities" as a simple and more encompassing term that includes all components of the SCOQ fishery.

Goal 4: Flexibility

> Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.
>
> Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.
>
> Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

FMAT Discussion

Goal 4 is an update and revision of Objective 4 (*Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs*) and focuses on the values of flexibility and adaptability. Goal 4 and Objectives 4.1 and 4.2 also acknowledge issues identified during planning conversations, including concerns about changing environmental conditions and the Council's implementation of an ecosystem approach to fisheries management.

Objective 4.1 is a new idea recommended by the FMAT. The Council is able to comment on proposed plans (e.g., wind energy development) that may impact fish habitat. The Mid-Atlantic Council also has a representative to the Mid-Atlantic Regional Planning Body. The FMAT recommended Objective 4.1 to recognize the opportunity for the Council to engage more proactively in ocean planning processes to consider and communicate the SCOQ fisheries' interests. The FMAT also recommended including the reference to long-term changes in Objective 4.2 to recognize the need to respond to both short and long-term changes, as current Objective 4 refers only to short term events.

Goal 5: Information

> Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.
>
> Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

FMAT Discussion

Goal 5 and Objective 5.1 are new and are not based on any of the current SCOQ FMP objectives. This goal and objective are based on feedback from planning conversations and scoping comments. The FMAT and public participants in the FMAT's webinar discussed the use of the words "support" and "promote" in Goal 5. Public participants noted that the SCOQ industry has been proactive in supporting

and investing in research, and preferred the word “support” for Goal 5. The FMAT agreed that the use of the word “support” in Goal 5 is consistent with the Council’s role and responsibilities relative to science, monitoring, and data collection. The use of “promote” in Objective 5.1 recognizes that the Council can encourage and provide guidance to partners and other entities to focus research that will benefit management.

4.1 Appendix 1: Contributors

The Fisheries Forum requested input from members of the Council's SCOQ Committee and AP and additional state agency representatives in order to develop this document and to inform the FMAT's recommendations. Contributors shared feedback on fishery management plan goals and objectives for SCOQ management to help focus and frame the Council's discussion of this issue.

Fisheries Forum staff conducted 18 informal planning calls with Committee and AP members and state representatives involved in surfclam and ocean quahog management. In addition, Council staff collected public comments on this issue during scoping hearings held in July 2017.

The following individuals contributed to the development of this document through short planning calls.

Surfclam and Ocean Quahog Committee members

- Peter deFur, Appointee (VA)
- Peter Hughes, Appointee (NJ)
- Roger Mann, Appointee (VA)
- Stew Michels, Delaware Division of Fish & Wildlife
- Steve Heins, New York Department of Environmental Conservation
- Howard King, Appointee (MD)
- Wes Townsend, Appointee (DE)
- Patricia Bennett, U.S. Coast Guard
- Mike Ruccio, NOAA Fisheries
- Doug Potts, NOAA Fisheries

Surfclam and Ocean Quahog AP members

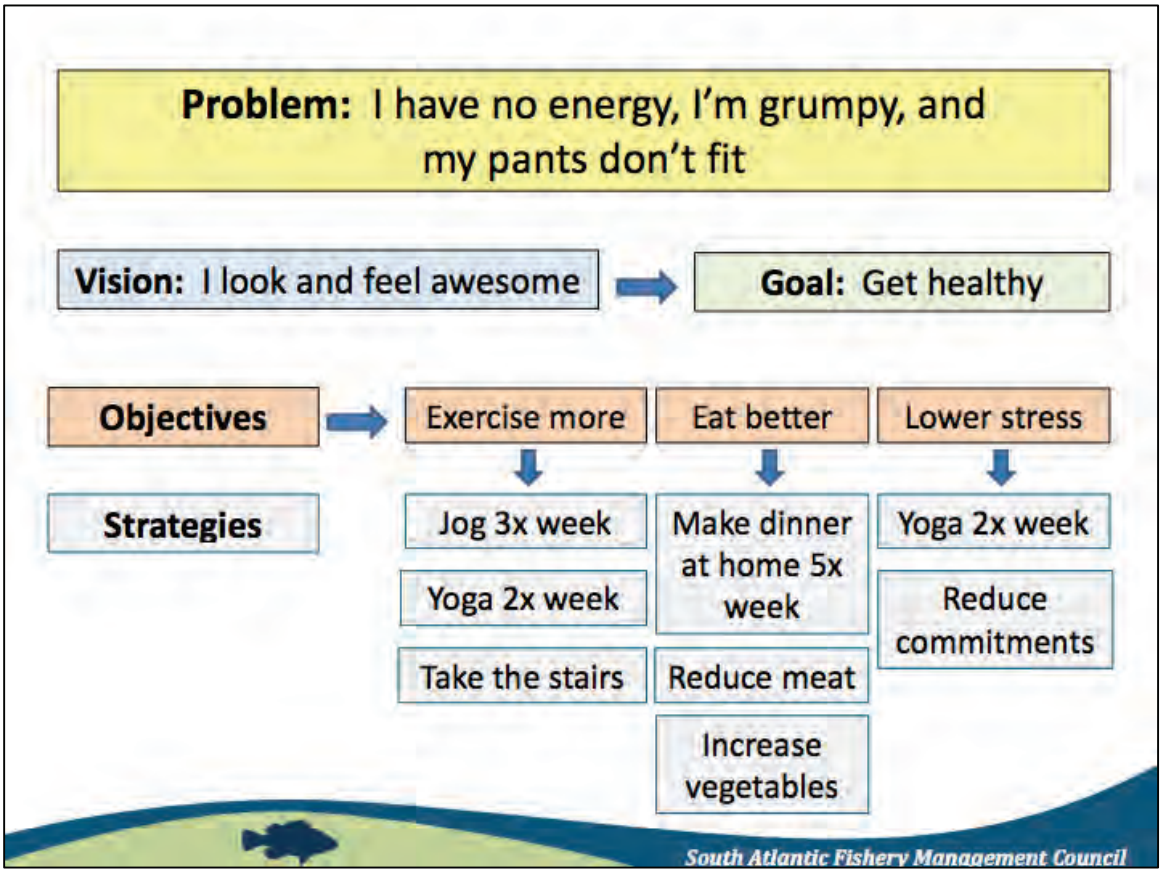
- Thomas Alspach (MD)
- Thomas Dameron (PA)
- Peter Himchak (NJ)
- Sam Martin (NJ)
- Joseph Myers (NJ) with Jeff Pike and Mike Kraft
- David Wallace (MD)

State agency representatives

- Tom Baum and Jeff Normant, New Jersey Division of Fish & Wildlife
- Terry Stockwell, Maine Department of Marine Resources

4.2 Appendix 2: South Atlantic Council example: Goals, objectives, and strategies

This diagram includes examples of goals, objectives, and strategies, and is excerpted from a staff presentation on strategic planning from the South Atlantic Fishery Management Council's March 2013 Council Visioning Workshop.



The full presentation is available online:
http://cdn1.safmc.net/wp-content/uploads/2016/11/28101424/2BB_Attach2b_StrategicPlanningPres-1.pdf

Additional information about the Council's Snapper-Grouper Visioning Process, and resources from past meetings, are available on the council's website.
http://www.safmc.net/resource-library/council-visioning-project

4.3 Appendix 3: Mid-Atlantic Fishery Management Council FMP goals and objectives

Summer Flounder, Scup, Black Sea Bass

1. Reduce fishing mortality in the summer flounder, scup, and black sea bass fisheries to assure that overfishing does not occur.
2. Reduce fishing mortality on immature summer flounder, scup, and black seabass to increase spawning stock biomass.
3. Improve the yield from the fishery.
4. Promote compatible management regulations between state and Federal jurisdictions.
5. Promote uniform and effective enforcement of regulations.
6. Minimize regulations to achieve the management objectives stated above.

Bluefish

1. Increase understanding of the stock and of the fishery.
2. Provide the highest availability of bluefish to U.S. fishermen while maintaining, within limits, traditional uses of bluefish.
3. Provide for cooperation among the coastal states, the various regional marine fishery management councils, and federal agencies involved along the coast to enhance the management of bluefish throughout its range.
4. Prevent recruitment overfishing.
5. Reduce the waste in both the commercial and recreational fisheries.

Spiny dogfish

1. Reduce fishing mortality to ensure that overfishing does not occur.
2. Promote compatible management regulations between state and Council jurisdictions and the US and Canada.
3. Promote uniform and effective enforcement of regulations.
4. Minimize regulations while achieving the management objectives stated above.
5. Manage the spiny dogfish fishery so as to minimize the impact of the regulations on the prosecution of other fisheries, to the extent practicable.
6. Contribute to the protection of biodiversity and ecosystem structure and function.

Squid, Mackerel, Butterfish

1. Enhance the probability of successful (i.e., the historical average) recruitment to the fisheries.
2. Promote the growth of the U.S. commercial fishery, including the fishery for export.
3. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP.
4. Provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy.
5. Increase understanding of the conditions of the stocks and fisheries.
6. Minimize harvesting conflicts among U.S. commercial, U.S. recreational, and foreign fishermen.

Surfclam and Ocean Quahog

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of surfclam and ocean quahog management to minimize the government and private cost of administering and complying with

regulatory, reporting, enforcement, and research requirements of surfclam and ocean quahog management.

3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of surfclam and ocean quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

Tilefish

The overall goal of this FMP is to rebuild tilefish so that the optimum yield can be obtained from this resource. To meet the overall goal, the following objectives are adopted:

1. Prevent overfishing and rebuild the resource to the biomass that would support MSY.
2. Prevent overcapitalization and limit new entrants.
3. Identify and describe essential tilefish habitat.
4. Collect necessary data to develop, monitor, and assess biological, economic, and social impacts of management measures designed to prevent overfishing and to reduce bycatch in all fisheries.

4.4 Appendix 4: Example of revised goals and objectives provided by Bumble Bee Seafoods

The following is an excerpt from scoping comments provide in a letter from Bumble Bee Seafoods to the Mid-Atlantic Fishery Management Council, July 12, 2017. These comments are the only example of a new full set of goals and objectives suggested by contributors to this project, and are included in this document for reference.

Bumble Bea Seafood supports the Council's effort to revise the goals and objectives for the OQSC FMP as they are not consistent with today's fishery and management issues. Provided below is a list of revised/rewritten goals and objectives which we believe more accurately reflect today's fishery:

1. Conserve and sustainably manage the Atlantic surf clam and ocean quahog resources throughout the management unit to prevent overfishing and ensure that the resource is not overfished while achieving optimum yield from the resource.
2. Promote opportunities for government and industry scientific research, especially into the effects of warming ocean temperatures and changing ocean conditions on the OQSC resources, and research necessary for sound management decisions.
3. Provide a simplified management regime and regulatory framework that minimize government and industry cost while allowing participants to achieve economic efficiency including efficient utilization of capital resources by industry.
4. Promote compatible management regulations between state and Councils jurisdiction.
5. Strengthen coordination between the New England Fishery Management Council and the Mid-Atlantic Fishery Management Council so that actions by one Council do not negatively impact the ability of industry to achieve optimum yield.

Appendix C

Table 1. Essential Fish Habitat descriptions for federally-managed species/life stages in the U.S. Northeast Shelf Ecosystem that are vulnerable to bottom tending fishing gear.

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
American plaice	juvenile	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 150	Fine grained sediments, sand, or gravel
American plaice	adult	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 175	Fine grained sediments, sand, or gravel
Atlantic cod	juvenile	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	25 - 75	Cobble or gravel
Atlantic cod	adult	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	10 - 150	Rocks, pebbles, or gravel
Atl halibut	juvenile	GOM and GB	20 - 60	Sand, gravel, or clay
Atl halibut	adult	GOM and GB	100 - 700	Sand, gravel, or clay
Barndoor skate	juvenile/ adult	Eastern GOM, GB, SNE, Mid-Atlantic Bight to Hudson Canyon	l0-750, most < 150	Mud, gravel, and sand
Black sea bass	juvenile	GOM to Cape Hatteras, NC, including estuaries from Buzzards Bay to Long Island Sound, Gardiners Bay, Barnegat Bay to Chesapeake Bay, Tangier/ Pocomoke Sound, and James River	1 - 38	Rough bottom, shellfish/ eelgrass beds, manmade structures, offshore clam beds, and shell patches
Black sea bass	adult	GOM to Cape Hatteras, NC, including Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay, and James River	20 - 50	Structured habitats (natural and manmade), sand and shell substrates preferred
Clearnose skate	juvenile/ adult	GOM, along continental shelf to Cape Hatteras, NC, including the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay mainstem	0 – 500, most < 111	Soft bottom and rocky or gravelly bottom
Haddock	juvenile	GB, GOM, and Mid-Atlantic south to Delaware Bay	35 - 100	Pebble and gravel
Haddock	adult	GB, eastern side of Nantucket Shoals, and throughout GOM	40 - 150	Broken ground, pebbles, smooth hard sand, and smooth areas between rocky patches
Little skate	juvenile/ adult	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes estuaries from Buzzards Bay south to mainstem Chesapeake Bay	0-137, most 73 - 91	Sandy or gravelly substrate or mud
Ocean pout	eggs	GOM, GB, SNE, and Mid-Atlantic south to Delaware Bay, including the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay and Cape Cod Bay	<50	Generally sheltered nests in hard bottom in holes or crevices
Ocean pout	juvenile	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, and Cape Cod Bay	< 50	Close proximity to hard bottom nesting areas

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Ocean pout	adult	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, MA Bay, Boston Harbor, and Cape Cod Bay	< 80	Smooth bottom near rocks or algae
Pollock	adult	GOME, GB, SNE, and Mid-Atlantic south to New Jersey and the following estuaries: Passamaquoddy Bay, Damariscotta R., MA Bay, Cape Cod Bay, Long Island Sound	15 – 365	Hard bottom habitats including artificial reefs
Red hake	juvenile	GOM, GB, continental shelf off SNE, and Mid-Atlantic south to Cape Hatteras, including the following estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, and Chesapeake Bay	< 100	Shell fragments, including areas with an abundance of live scallops
Red hake	adult	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras, these estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, Delaware Bay, and Chesapeake Bay	10 - 130	In sand and mud, in depressions
Redfish	juvenile	GOM, southern edge of GB	25 - 400	Silt, mud, or hard bottom
Redfish	adult	GOM, southern edge of GB	50 - 350	Silt, mud, or hard bottom
Rosette skate	juvenile/ adult	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33-530, most 74-274	Soft substrate, including sand/mud bottoms
Scup	juvenile/ adult	GOM to Cape Hatteras, NC, including the following estuaries: MA Bay, Cape Cod Bay to Long Island Sound, Gardiners Bay to Delaware inland bays, and Chesapeake Bay	0-38 for juv 2-185 for adult	Demersal waters north of Cape Hatteras and inshore estuaries (various substrate types)
Silver hake	juvenile	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, ME, MA Bay to Cape Cod Bay	20 – 270	All substrate types
Summer Flounder	juvenile/ adult	GOM to Florida – estuarine and over continental shelf to shelf break	0-250	Demersal/estuarine waters, varied substrates. Mostly inshore in summer and offshore in winter.
Smooth skate	juvenile/ adult	Offshore banks of GOM	31–874, most 110-457	Soft mud (silt and clay), sand, broken shells, gravel and pebbles
Thorny skate	juvenile/ adult	GOM and GB	18-2000, most 111-366	Sand, gravel, broken shell, pebbles, and soft mud
Tilefish	juvenile/ adult	Outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary	100 - 300	Burrows in clay (some may be semi-hardened into rock)
White hake	juvenile	GOM, southern edge of GB, SNE to Mid-Atlantic and the following estuaries: Passamaquoddy Bay, ME to Great Bay, NH, Massachusetts Bay to Cape Cod Bay	5 - 225	Seagrass beds, mud, or fine grained sand
Winter flounder	adult	GB, inshore areas of GOM, SNE, Mid- Atlantic south to Delaware Bay and the estuaries from Passamaquoddy Bay, ME to Chincoteague Bay, VA	1 - 100	Mud, sand, and gravel

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Winter skate	juvenile/ adult	Cape Cod Bay, GB, SNE shelf through Mid-Atlantic Bight to North Carolina; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 371, most < 111	Sand and gravel or mud
Witch flounder	juvenile	GOM, outer continental shelf from GB south to Cape Hatteras	50 - 450 to 1500	Fine grained substrate
Witch flounder	adult	GOME, outer continental shelf from GB south to Chesapeake Bay	25 - 300	Fine grained substrate
Yellowtail flounder	adult	GB, GOM, SNE and Mid-Atlantic south to Delaware Bay and these estuaries: Sheepscot River and Casco Bay, ME, MA Bay to Cape Cod Bay	20 - 50	Sand or sand and mud

ATLANTIC SURFCLAM AND OCEAN QUAHOG EXCESSIVE SHARES AMENDMENT

PUBLIC HEARING DOCUMENT

COMMENT PERIOD

August 1 – September 14, 2019

Prepared by the
Mid-Atlantic Fishery Management Council
in cooperation with
the National Marine Fisheries Service

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

INSTRUCTIONS FOR PROVIDING PUBLIC COMMENTS

The Mid-Atlantic Fishery Management Council (MAFMC or Council) will collect public comments on the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment during 4 public hearings to be held during a 45-day Public comment period from August 1 to September 14, 2019. Written comments may be sent by any of the following methods:

1. **Online** at www.mafmc.org/comments/scoq-excessive-shares-amendment
2. **Email** to the following address: jmontanez@mafmc.org
3. **Mail or Fax** to:

Chris Moore, Ph.D., Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901
FAX: 302.674.5399

If sending comments through the mail, please write "SCOQ Excessive Shares Amendment Comments" on the outside of the envelope. If sending comments through email or fax, please write "SCOQ Excessive Shares Amendment Comments" in the subject line.

All comments, regardless of submission method, will be compiled for review and consideration by the Council. **Please do not submit the same comments through multiple channels.**

Interested members of the public are encouraged to attend any of the following 4 public hearings and to provide oral or written comments:

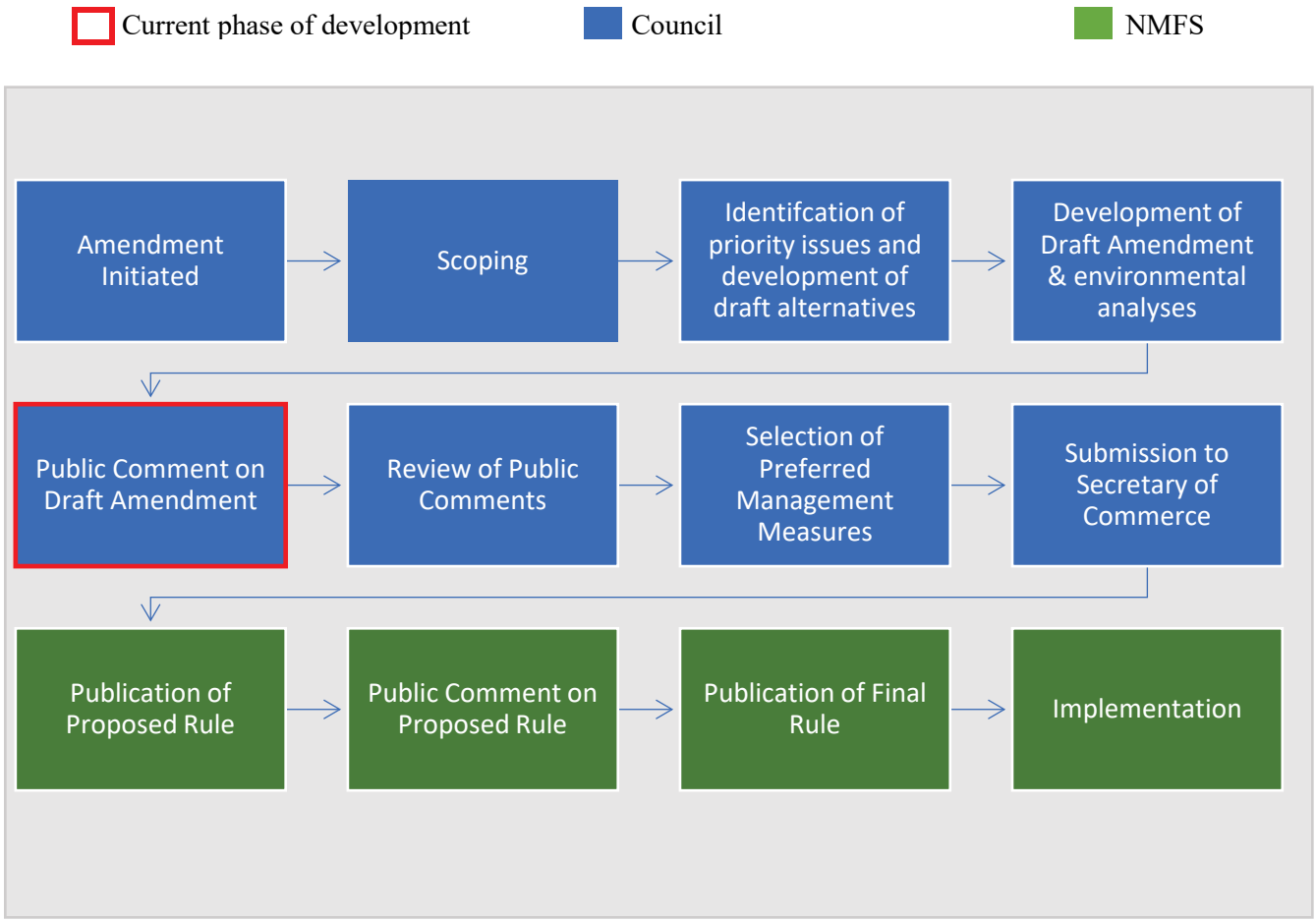
Date and Time	Location
Thursday, Aug 1, 2019; 6:30 pm	**The Grand Hotel** 1045 Beach Avenue, Cape May, NJ 08204. Telephone: (609) 884-5611.
Wednesday, Aug 7, 2019; 6:30 pm	**Webinar** This meeting will be conducted via webinar accessible via the internet. Connection information to be posted at www.mafmc.org/council-events prior to the meeting.
Monday, Sept 9, 2019; 6:30 pm	**LaQuinta Inns & Suites** 300 S. Salisbury Blvd., Salisbury, MD 21801. Telephone: (410) 546-4400
Tuesday, Sept 10, 2019; 6:30 pm	**Radisson Hotel Providence Airport** 2081 Post Rd, Warwick, RI 02886. Telephone: (401) 739-3000.

For additional information and updates, please visit: http://www.mafmc.org/actions/scoq-excessive-shares-amendment. If you have any questions, please contact:

José Montañez, Ph.D.,
Fishery Management Specialist
Mid-Atlantic Fishery Management Council
302.526.5258

WHAT HAPPENS NEXT?

This document supports a public comment period scheduled from August 1, 2019 to September 14, 2019. Following public hearings and the comment period, written and oral comments will be compiled and provided to the Council for review. These comments will be considered prior to taking final action on the amendment, which is tentatively scheduled for December 2019. The Council's recommendations are not final until they are approved or partially approved by the Secretary of Commerce through the National Marine Fisheries Service, so the timing of full implementation of this action will depend on the federal rulemaking timeline. This rulemaking process is expected to occur in 2020, with revised measures possibly effective during the 2020 fishing year.



EXCESSIVE SHARES AMENDMENT TO THE ATLANTIC SURFCLAM AND OCEAN QUAHOG FISHERY MANAGEMENT PLAN

(Includes Draft Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis)

DRAFT AS OF 07/16/2019

Mid-Atlantic Fishery Management Council

in cooperation with

the National Marine Fisheries Service (NMFS)

Draft adopted by MAFMC: 06-04-2019
Final adopted by MAFMC: MM-DD-YYYY
Draft submitted to NOAA: MM-DD-YYYY
Final approved by NOAA: MM-DD-YYYY

Council Address	NMFS Address
Mid-Atlantic Fishery Management Council	Greater Atlantic Regional Fisheries Office
800 North State Street, Suite 201	55 Great Republic Drive
Dover, DE 19901	Gloucester, MA 01930

1.0 EXECUTIVE SUMMARY

This document was prepared by the Mid-Atlantic Fishery Management Council (MAFMC or Council) in consultation with the National Oceanic and Atmospheric Administrations (NOAA) National Marine Fisheries Service (NMFS). This document was developed in accordance with all applicable laws and statutes described in section 8.0.

The purpose of this action (amendment)[1] is to consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog individual transferrable quota (ITQ) privileges. For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap that is intended to prevent a firm or entity from exerting market power.[2] The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

This action includes measures to revise the process for specifying multi-year management measures, to require periodic review of the excessive shares cap level, and allow adjustments to be made under the frameworkable provisions of the FMP. In addition, this amendment considers revisions to some or all of the current management objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP).

1.1 Summary of Alternatives

This document details management alternatives being considered and their expected impacts on several components of the environment. The alternatives are summarized in Boxes ES-1 to ES-4 below, and described in more detail in sections 5.1 to 5.5.

[1] Amendment number to be added after final action.

[2] An outcome of obtaining market power could be pricing power in either output (product) or input (factor) markets or the ability to disrupt other firms or entities from participating in the market.

Box ES-1. Summary of the excessive shares alternatives. ***The Council needs to choose a specific model and affiliation level to implement and/or monitor any particular excessive shares cap level.***

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No limit or definition of an excessive share is included in the FMP.
Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)	A single cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership[3] with unlimited leasing of annual allocation (cage tags) throughout the year (Note: all excessive share alternatives are applicable throughout the year). Since the cap is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit.
Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017	The single quota share caps would be based on the highest level of quota share held by an individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 2.2: Quota share cap at 49%	The single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).
Sub-Alternative 2.3: Quota share cap at 95%	The single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). A 95% cap could potentially result in a minimum (if fully consolidated) of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%).
Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)	A cap based on combined values for quota share ownership plus leasing of annual allocation (cage tags) would be established separately for surfclams and ocean quahogs. Since the cap is based on ownership plus leasing of annual allocation (cage tags), it accounts for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit.
Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017	The combined caps would be based on the highest level of quota share ownership plus leasing of annual allocation (cage tags) by an individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 3.2: Combined cap at 40%	The combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE (Center for Independent Experts) review. A 40% cap could potentially result in a minimum (if fully consolidated) of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%).
Sub-Alternative 3.3: Combined cap at 49%	The combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).

[3] **Quota Share Ownership:** The quota share held by an individual or entity. In a manner of speaking, "ownership" usually represents a property right in perpetuity or for as long as the owner wants. However, under MSA there are some important policy issues with respect to duration in the design of limited access privilege programs (e.g., ITQs). The MSA stipulates that limited access privileges may be revoked or limited in accordance with the Act, they do not confer rights of compensation, and they do not create any ownership of a fish before it is harvested [Section 303A(b)] (NMFS 2007).

Box ES-1 (Continued). Summary of the excessive shares alternatives. ***The Council needs to choose a specific model and affiliation level to implement and/or monitor any particular excessive shares cap level.***

Alternatives	Summary of Alternative
Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)	A two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report.
***Sub-Alternative 4.1*:** Two-part cap based on highest level in the ownership data, 2016-2017	The two-part cap approach (one cap on allocation ownership and one cap on combined [allocation ownership plus leasing of annual allocation or cage tags]) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation	The two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, a 15% for additional consolidation is added to the maximum values reported in the ownership data for the 2016-2017 period. The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate/growth if market conditions allow.
Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%	The two-part cap with an ownership quota share cap at 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report.
Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota	The cap would be 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (annual catch target) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. A 40% cap could potentially result in a minimum (if fully consolidated) of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%).
Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota	The cap would be 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).

Box ES-2. Summary of the excessive shares review alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	There would not be a requirement for periodic review of implemented excessive share measures.
Alternative 2: Require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed	This alternative would require for periodic review of excessive shares measures that the Council adopts.

Box ES-3. Summary of the framework adjustment process alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No changes to the list of management measures that can be addressed via the framework adjustment process.
Alternative 2: Add excessive shares cap levels to the list of measures to be adjusted via framework	This alternative would of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap), only if the modification would not result in an entity having to divest.

Box ES-4. Summary of the multi-year management measures alternatives.

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No changes to the process to set surfclam and ocean quahog management specifications for up to 3 years.
Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule	Specifications could be set for a period up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set until a new surfclam and/or ocean quahog assessment is produced.

1.2 Summary of Impacts

The following section presents a summary of the expected impacts by alternative and cumulative for management alternatives being considered (Boxes ES-5 to ES-8). The impacts of each alternative, and the criteria used to evaluate them, are described in section 7.0. Impacts (qualitative and/or quantitative) are described in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). In section 7.0, the alternatives are compared to current condition of the value ecosystem component (VEC) and also compared to each other. The recent conditions of the VECs include the biological condition of the target stock, non-target stocks, and protected species over most of the recent five years, as well as characteristics of commercial fisheries and associated human communities over the same time frame. The guidelines used to determine impacts to each VEC are described in section 7.0 (see especially Table 16).

The actions proposed through this amendment are largely administrative in nature and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted. However, these alternatives may have indirect impacts, particularly for the human communities VEC.

In general terms, measures that would curtail entities from exerting market power and therefore not decreasing competition would have positive socioeconomic impacts. Lastly, measures that would result in community disruptions as result of additional consolidation (e.g., decrease in the number of independent harvesters, decrease in employment) would have negative socioeconomic impacts.

Excessive consolidation, in an economic context, is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery. Anticipated impacts are described below.

1.2.1 Excessive Share Alternatives

1.2.1.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. None of

the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, none of the alternatives evaluated are expected to have impacts (direct or indirect) on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.1.2 Human Communities/Socioeconomic Impacts

Alternative 1

As previously indicated, none of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions.

Under alternative 1 (no action/*status quo*) the current management approach regarding excessive shares (i.e., share accumulation) would continue. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. The FMP would rely only on federal anti-trust provisions. The Department of Justice (DOJ) has indicated that their Business Practice Process does provide a pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment. Therefore, this alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0), and a means to track and monitor ownership relative to that definition is needed.

Since alternative 1 does not include a limit or definition of excessive shares accumulation, it could potentially lead to one entity holding 100% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. An excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries. Alternative 1 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions.

Alternative 2

Alternative 2 considers a single cap on how much quota one individual or entity could hold. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags). Because alternative 2 is based on ownership-only values, none of the sub-alternatives discussed below account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when

setting the cap limit. Participants in these fisheries have reported that they are various types of transactions involving ITQs that commonly occur, including temporary and permanent ITQ transfers, long-term ITQ leases (e.g., five years or more) and transfers of bushel tags from bank lenders and between related and unrelated business entities.

Note: The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and/or monitor any particular excessive shares cap level.[4]

Under Sub-alternative 2.1, the single quota would be based on the highest level of quota share held by any individual or entity reported in the ownership data for each fishery for the 2016-2017 period. The highest level of quota share held by any individual or entity during 2016-2017 was 28% for surfclams and 22% for ocean quahogs (regardless of model or affiliation level; Tables 2 and 3). If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in this fishery (i.e., four large entities at 28%, 28%, 28%, and 16%). If fully consolidated, a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in this fishery (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%). This implies at least four entities in the surfclam and five entities in the ocean quahog fisheries, which may provide some protection against excessive consolidation and associated market power and social issues. However, as indicated in section 5.0, it is also possible that under all alternatives evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

If the surfclam and ocean quahog cap levels described above (28% and 22%, respectively) had been implemented in 2017, all entities would have fallen at or below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.1 in the surfclam or ocean quahog fisheries. Sub-alternative 2.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Under Sub-alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.2 in the

[4] See Definitions and Terminology at the end of Section 2.0 for more information on these choices. More detailed information on these choices is also found in sections 5.0 and 7.0.

surfclam or ocean quahog fisheries. Sub-alternative 2.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Under Sub-alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%; Table 18). This sub-alternative is based on the recommendations made by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). It is stated in the Compass Lexecon Report it is possible that under some circumstances an excessive shares cap of 100% may be appropriate. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011).

Sub-alternative 2.3 could potentially result in quota accumulation levels that are near identical to those under alternative 1 (*status quo* alternative). If one firm or entity controls 95% of the quota, there would be no market for leasing under the current quota levels for these species, as nearly all the quota would be held by a single entity. Sub-alternative 2.3 could potentially allow for share concentration levels similar to those under the current conditions and as such, it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries.

If the surfclam and ocean quahog cap levels described above (95% for surfclam and 95% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.3 in the surfclam or ocean quahog fisheries. Sub-alternative 2.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions.

Comparisons Across Sub-Alternatives 2.1 to 2.3

In this section a comparison between sub-alternatives 2.1 through 2.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 2.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 2.2 and 2.3 as no entity would be above the caps (if they had been implemented in 2017). However, in the long-term, alternative 2.1 would have slight positive socioeconomic impacts compared to sub-alternative 2.2, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.1 would have positive socio-economic impacts compared to sub-alternative 2.3, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation (as sub-alternative 2.3 could potentially result in one large entity controlling 95% of the quota for surfclam and/or ocean quahogs).

Sub-alternative 2.2 would have less positive socioeconomic impacts in the long-term compared to sub-alternatives 2.1, as sub-alternative 2.2 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.2 would have positive socioeconomic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.2 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 2.3 would have negative socioeconomic impacts in the long-term compared to sub-alternatives 2.1 and 2.2, as sub-alternative 2.3 has the potential to provide the smallest degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 2.1 would result in the most positive impacts, sub-alternative 2.2 would result in the second most positive impacts, and sub-alternative 2.3 would result in the least positive impacts.

Alternative 3

Alternative 3 considers a combined cap – combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

Under Sub-alternative 3.1, the cap would be based on the highest level of combined cap held by any individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. Under sub-alternative 3.1, depending on the affiliate level and model selected, the combined cap for surfclam could be as low as 28% under the net actual percentage model (at the individual/business level) or as high as 49% under the cumulative 100% model (at the corporate officer level; Tables 2 and 19). Based on these combined cap values, sub-alternative 3.1 could result in a minimum number of large entities (if fully consolidated) in the surfclam fishery ranging from four under the net actual percentage model to two under the cumulative 100% model (Table 19). Under this alternative, depending on the affiliate level and model selected, the combined cap for ocean quahogs could be as low as 29% under the net actual percentage model (at the individual/business level) or as high as 41% under the cumulative 100% model (at the corporate officer level; Table 3 and 19). For ocean quahogs, this sub-alternative could result in a minimum number of large entities (if fully consolidated) ranging from four under the net actual percentage model to three under the cumulative 100% model (Table 19).

If the surfclam and ocean quahog combined cap levels described above had been implemented in 2017, all entities would have fallen below those combined caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the combined cap levels under sub-alternative 3.1 in the surfclam or ocean quahog fisheries. Sub-alternative 3.1 is expected to have socioeconomic impacts ranging from no impact

in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, some of the potential lower combined cap values under this sub-alternative (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.

Under Sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those combined caps under the net actual percentage model for both surfclams and ocean quahogs. However, under the cumulative 100% model, between one (1% of all entities) and three (4% of all entities) surfclam entities and between one (2% of all entities) and four (9% of all entities) ocean quahog entities would have had combined cap above these levels depending on the affiliation level (Table 19).

In general terms, sub-alternative 3.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, as indicated above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Under Sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.2 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Comparisons Across Sub-Alternatives 3.1 to 3.3

In this section a comparison between sub-alternatives 3.1 through 3.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 3.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 3.2 and 3.3, as in general terms, no entity would be above the caps (if they had been implemented in 2017; the exception to this generality is listed below). In the long-term, alternative 3.1 would have no socioeconomic impacts in the long-term compared to sub-alternative 3.2, because they both could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 19). The exception to this generalization would be sub-alternative 3.1 under the cumulative 100% model which would result in two large entities participating in the surfclam fishery, and as such, provides a lesser degree of protection against excessive consolidation and associated market power and social issues. As such, this results in long-term positive impacts that are smaller in magnitude. Lastly, in general terms, sub-alternative 3.1 would have positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.1 has the potential to provide a larger degree of protection against excessive consolidation. However, some of the potential lower combined cap values under sub-alternative 3.1 (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 3.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 3.2 and 3.3.

Sub-alternative 3.2 would have slight positive socioeconomic impacts in the long-term compared to sub-alternatives 3.3, as sub-alternative 3.2 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. However, as noted above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount

of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Sub-alternative 3.3 would have slightly less positive socioeconomic impacts in the long-term compared to sub-alternatives 3.1 and 3.2, as sub-alternative 3.3 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 3.1 would result in the most positive impacts, sub-alternative 3.2 would result in the second most positive impacts, and sub-alternative 3.3 would result in the least positive impacts.

Alternative 4

Alternative 4 considers a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Mitchell et al. (2011) indicated that "the preference for short-term accumulations in the two-part cap limits the share of long-term quota controlled by any single party, which limits the ability to foreclose competitors by withholding quota on a committed multiseason basis." Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex contracting business practices that occur in this fisheries.

Under Sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage tags) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period.

Under sub-alternative 4.1, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 28% ownership / 28% combined under the net actual percentage model (at the individual/business level) or as high as 28% ownership / 49% combined under the cumulative 100% model (at the corporate officer level; Tables 2 and 20). Based on these combined cap values, sub-alternative 4.1 could result in a minimum number of four large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 22% ownership / 29% combined under the net actual percentage model (at the individual/business level) or as high as 22% ownership / 41% combined under the cumulative 100% model (at the corporate officer level; Tables 3 and 20). For ocean quahogs, this sub-alternative could result in a minimum number of five large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries. Sub-alternative 4.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. However, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.

Under Sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for 2016-2017 to allow for additional consolidation (Table 20). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow.

Under sub-alternative 4.2, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 43% ownership / 43% combined under the net actual percentage model (at the individual/business level) or as high as 43% ownership / 64% combined under the cumulative 100% model (at the corporate officer level; Table 20). Based on these combined cap values, sub-alternative 4.2 could result in a minimum number of three large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 37% ownership / 44% combined under the net actual percentage model (at the individual/business level) or as high as 37% ownership / 56% combined under the cumulative 100% model (at the corporate officer level; Table 20). For ocean quahogs, this sub-alternative could result in a minimum number of three large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.2 in the surfclam or ocean quahog fisheries. Sub-alternative 4.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Under Sub-alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. If fully consolidated, a 30% ownership cap and a 60% combined cap (quota share ownership plus leasing of annual allocation or cage tags) could potentially result in a minimum of four large entities (if fully consolidated) participating in the fisheries (i.e., 30%, 30%, 30%, 10%; Table 20).

If the surfclam and ocean quahog two-part cap levels described above (i.e., 30%/60%) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.3 in the surfclam or ocean quahog fisheries. Sub-alternative 4.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Comparisons Across Sub-Alternatives 4.1 to 4.3

In this section a comparison between sub-alternatives 4.1 through 4.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

In general terms, sub-alternatives 4.1, 4.2, and 4.3 are likely to have neutral socioeconomic impacts (e.g., similar magnitude and direction) in the short-term and long-term, because they all could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 20). In general terms, sub-alternatives 4.1 and 4.3 would result in neutral socioeconomic impacts in the short-run and long-run but marginally positive compared to sub-alternative 4.2. As such, they all have the potential to provide a relatively similar degree of protection against excessive consolidation and associated market power and social issues. In addition, none of these sub-alternatives would result in any entity been above the caps (if they had been implemented in 2017). However, some of the potential lower two-part cap values under sub-alternative 4.1 (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 4.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 4.2 and 4.3.

Alternative 5

Alternative 5 considers a cap on quota share ownership-only of 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of

the last 5 years) and B shares is the difference between the ACT (annual catch target) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

The 40% cap is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011).

If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 21). If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 21). As such, no entity would have been constrained by the cap levels under alternative 5 in the surfclam or ocean quahog fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase. In addition, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. Alternative 5 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. For example, it was indicated that:

- Establishing a Quota A and Quota B shares system would send a market signal indicating that the surfclam and ocean quahog quotas (TACs) have been reduced, because the amount of quota released under Quota A shares is lower than the overall TACs that have been implemented in recent years. This in turn could result in big companies that purchase clam products (Progresso, Campbell Soup Company, etc.) to switch to lower quality foreign imports
- Quota A and Quota B shares system would disrupt banking/financial arrangement because ITQ shares have been used as collateral in securing long-term loans
- Aligning the quota with market demand may not necessarily result in equilibrium because long-term contacts arrangement (leasing arrangements) exist in these fisheries; and breaking existing long-term contracts could result in lawsuits
- Aligning the quota with market demand would give market power to the industry members that have not been able to lease/use their ITQ shares in recent years
- This alternative could result in closing of processing plants
- There is the potential for someone to lease large quantities of A shares and not use them to develop market power

Alternative 6

Alternative 6 considers a cap on quota share ownership-only of 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the tilefish golden IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. The only difference between alternatives 5 and 6 are the cap levels on quota share ownership, all other aspects of the alternatives are identical.

If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%). If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office). As such, no entity would have been constrained by the cap levels under alternative 6 in the surfclam or ocean quahog fisheries. Alternative 6 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed under alternative 5 and also apply here.

Comparisons Across All Excessive Shares Alternatives

In general terms, alternatives 5 and 6 would result in the largest positive impacts as a result of protection against market power or other anticompetitive behaviors and associated social issues, alternatives 3 and 4 would result in the second highest positive impacts, alternative 2 would result in the third highest positive impacts, and alternative 1 would result in the least positive impacts. More detail of the expected impacts is provided below.

Alternative 1 (No Action)

As previously indicated, under alternative 1 (no action) no limit or definition of excessive shares accumulation is included in the FMP. This alterative is expected to result in impacts ranging from no impacts in the short-term to negative impacts in the long-term when compared to alternatives 2 through alternative 6, because alternative 1 provides no protection against excessive consolidation and associated market power and social issues. The exception would be when alternative 1 is compared to sub-alternative 2.3, as sub-alternative 2.3 could potentially allow for share concentration levels similar to those under alternative 1, and it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Compared to sub-alternative 2.3, alternative 1 is likely to have a similar magnitude of socioeconomic impacts (i.e., neutral).[5]

None of the excessive share alternatives discussed in this document are expected to impact the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted. However, these alternatives may have indirect impacts, particularly for the human communities VEC.

Alternative 2

Alternative 2 would implement a single cap based on quota share ownership-only with unlimited leasing of annual allocations (cage tags). Because alternative 2 is based on ownership-only values, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative would limit the exercise of market power through capping ownership levels for surfclams and ocean quahogs, but it does not address the creation or exercise of market power through contractual control of quota.

Alternative 2 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 3 and alternative 4, alternative 2 is expected to have similar directional impacts (i.e., no impacts in the short-term to

[5] Since sub-alternative 2.3 is likely to result in impacts similar to those under alternative 1, all other comparisons involving alternative 2 exclude sub-alternative 2.3, with the understanding that when comparisons are made with sub-alternative 2.3 exclusively, impacts would be similar to those under alternative 1 (no action/*status quo*).

positive impacts in the long-term) but smaller in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternatives 3 and 4).

Lastly, alternative 2 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 3

Alternative 3 would implement a combined cap based on quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Alternative 3 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 3 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 3). Compared to alternative 4, alternative 3 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 3 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 4

Alternative 4 would implement a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on

ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Alternative 4 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 4 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 4). Compared to alternative 3, alternative 4 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 4 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 5

Alternative 5 would implement a cap on quota share ownership-only with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Alternative 5 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because alternative 5 not only addresses the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also aligns supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. For these same reasons, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) compared to alternatives 2, 3, and 4, but likely larger in magnitude. Lastly, compared to alternative 6, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. However, under alternative 5, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will

decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners.

However, as indicated above, during the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed above under alternative 5.

Alternative 6

The expected impacts under alternative 6 are similar to those described under alternative 5 above.

1.2.2 Excessive Shares Review Alternatives

1.2.2.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would not be a requirement for periodic review of implemented excessive shares measures. Alternative 2, would require for periodic review of excessive shares measures that the Council adopts. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.2.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels (and expected ex-vessel revenues), fishery distribution, or fishing methods and practices. However, conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure established at an appropriate level now could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry). Thus, not having a mechanism in place to review the effectiveness of implemented excessive shares measures (alternative 1) could result in socioeconomic impacts that range from no impacts (if implemented excessive shares measures or cap level is appropriate through time) to slight negative (if implemented excessive shares measures or cap level is not appropriate through time) when compared to current conditions.

Alternative 2, is also administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. As with the no action alternative above, alternative 2 is not expected to have impacts on the quantity of surfclam or ocean quahog landings, including revenues. However, this alternative requires periodic review of

excessive shares measures that the Council adopts. This alternative would implement a periodic review of regulations to protect against market power or other anticompetitive behavior in these fisheries in a timely manner. Alternative 2 is expected to result in socioeconomic impacts ranging from no impacts to slight positive when compared to current conditions. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts as it allows for a proactive review of excessive management shares management measure(s) implemented by the Council. While it is not possible to anticipate the potential management costs associated with alternative 2, they are likely to be higher than those associated with alternative 1. Costs will depend on the complexity and scope of the review process.

1.2.3 Framework Adjustment Process Alternatives

1.2.3.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would not be changes to the list of management measures that can be addressed via the framework adjustment process. Alternative 2 would expend of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.3.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels (and expected ex-vessel revenues), fishery distribution, or fishing methods and practices. Alternative 1 (no action) would not allow the excessive shares cap to be modified via the framework adjustment process. The Council would still have the prerogative to review any adopted excessive shares measures and make modifications to any implemented excessive cap level through an amendment if it becomes inefficiently high or low through time as fisheries conditions change. However, making modifications to existing regulations using an amendment process requires more work and time compared to a framework process. Not having the flexibility to make minor modifications to the excessive shares cap level (no action alternative) could result in socioeconomic impacts ranging from no impact to slightly negative when compared to current conditions. Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. The proposed alternative would provide flexibility to address potential modifications to any implemented excessive cap level (i.e., cap value only and not underlaying cap system) if it becomes inefficiently high or low through time as fisheries conditions change. Alternative 2 is expected to

result in socioeconomic impacts that range from no impact to slight positive when compared to current conditions. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts because this alternative provides the flexibility to adjust potential modifications to any implemented excessive cap level if it becomes inefficiently or low through time as fisheries conditions change, and this has the potential to reduce needed staff time and management cost.

1.2.4 Multi-Year Management Measures Alternatives

1.2.4.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources. Although there are no impacts on the VECs, alternative 2 would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

1.2.4.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and would therefore have no impacts on human communities (i.e., socioeconomic impacts).

Box ES-5. Summary of the expected impacts of excessive shares alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least).

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 1 (No-Action/*Status Quo*)	No limit or definition of an excessive share is included in the FMP	No Impact	No impact in the short-term to - in the long-term if consolidation patterns result in decreased competition. Could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries	NA (Not Applicable)
Alternative 2 Sub-alternative 2.1	Single Cap - Quota share cap based on highest level in the ownership data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Cap based on ownership-only)	1
Alternative 2 Sub-alternative 2.2	Single Cap - Quota share cap at 49%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Cap based on ownership-only)	2
Alternative 2 Sub-alternative 2.3	Single Cap - Quota share cap at 95%	No Impact	No impact in the short-term to - in the long-term if consolidation patterns result in decreased competition. (Cap based on ownership-only). Could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries	3
Alternative 3 Sub-alternative 3.1	Combined Cap - based on highest level in the ownership data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota). However, some of the potential lower combined cap values under this sub-alternative (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.	1
Alternative 3 Sub-alternative 3.2	Combined Cap at 40%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota). If implemented in 2017, this sub-alternative would had constrained 4 entities, incurring slight negative socioeconomic impacts in the short-term and long-term	2

Box ES-5 (Continued). Summary of the expected impacts of excessive shares alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least).

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 3 Sub-alternative 3.3	Combined Cap at 49%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota)	3
Alternative 4 Sub-alternative 4.1	Two-part cap (one cap on ownership and one cap on combined) - based on highest level in the ownership data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on ownership and combined cap (ownership + leasing). However, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.	1
Alternative 4 Sub-alternative 4.2	Two-part cap - Same as 4.1 + 15%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on ownership and combined cap (ownership + leasing)	2
Alternative 4 Sub-alternative 4.3	Two-part cap - ownership quota share cap at 30% and combined cap at 60%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on ownership and combined cap (ownership + leasing)	1

Box ES-5 (Continued). Summary of the expected impacts of excessive shares alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least).

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 5		No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Aligns supply in the fisheries with market demand). However, this alternative would result in processors paying more in financial cost (due to additional leasing and/or purchase costs), thus resulting in negative socioeconomic impacts in the short-term and long-term. This alternative will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners. During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices	NA
Alternative 6	No Impact	No Impact	Same as those under alternative 5 above	NA

Box ES-6. Summary of the expected impacts of excessive shares review alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact to slight -
Alternative 2	No Impact	No Impact	No Impact	No impact to slight +

Box ES-7. Summary of the expected impacts of framework adjustment process alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact to slight -
Alternative 2	No Impact	No Impact	No Impact	No impact to slight +

Box ES-8. Summary of the expected impacts of multi-year management alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No Impact
Alternative 2	No Impact	No Impact	No Impact	No Impact

2.0 LIST OF FREQUENTLY USED ACRONYMS, CONVERSIONS, AND DEFINITIONS

Frequently Used Acronyms

ABC	Acceptable Biological Catch
ACT	Annual Catch Target
bu	Bushels
CEA	Cumulative Effects Assessment
COE	Chief Executive Officer
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIE	Center for Independent Experts
cm	Centimeter (0.393 inches)
CSP	Catch Share Programs
DOJ	U.S. Department of Justice
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EMUs	Ecological Marine Units
EO	Executive Order
ESA	Endangered Species Act
F	Fishing Mortality Rate
FMAT	Fishery Management Action Team
FMP	Fishery Management Plan
FR	Federal Register
FONSI	Finding of No Significant Impact
GAO	Government Accountability Office
GARFO	Greater Atlantic Regional Fisheries Office
GB	Georges Bank
GOM	Gulf of Maine
GSC	Great South Channel
HMA	Habitat Management Area
IBQ	Individual Bluefin Quota
IFQ	Individual Fishing Quota
ITQ	Individual Transferrable Quota
k	Kilometer (0.621 miles)
LAPP	Limited Access Privilege Program
LPUE	Landings Per Unit of Effort
m	Meter (3.280 feet)
MAFMC	Mid-Atlantic Fishery Management Council (Council)
MFP	Multi-factor Productivity
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NRCC	Northeast Regional Coordinating Council
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NS	National Standard
OHA2	Omnibus Essential Fish Habitat Amendment 2 (NEFMC)
OFL	Overfishing Limit

OY	Optimal Yield
P, Pr, RFF	Past, Present, Reasonably Foreseeable Future
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
PSP	Paralytic Shellfish Poisoning
R	Recruitment
R_0	Recruitment in an Unfished Stock
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SBA	Small Business Administration
SSB	Spawning Stock Biomass
SSC	Scientific and Statistical Committee
SASI	Swept Area Seabed Impact
U.S.	United States
VEC	Valued Ecosystem Component
VMS	Vessel Monitoring Systems
WGOM	Western Gulf of Maine

Conversions

1 metric ton (mt) = 2,204.622 pounds (lb); 1 kilometer = 0.621 miles; 1 meter (m) = 3.280 feet (ft); 1 centimeter (cm) = 0.393 inches; 1 Maine bushel = 11 lb meats (1.2445 ft^3); 1 Atlantic surfclam bushel = 17 lb meats (1.88 ft^3) ; 1 ocean quahog bushel = 10 lb meats (1.88 ft^3). Number of bushels divided by 32 = number of cage tags.

Definitions and Terminology

Annual Allocation/Cage Tags: For each species (surfclam and ocean quahogs), the initial allocation for the next fishing year is calculated by multiplying the quota share percentage held by each ITQ permit holder by the quota specified by the Regional Administrator. The total number of bushels of annual allocation is divided by 32 to determine the appropriate number of cage tags to be issued to allocation holders.

Atlantic Surfclam and Ocean Quahog Information Collection Program Data: Requirements became effective on January 1, 2016. The Atlantic Surfclam and Ocean Quahog Information Collection Program was implemented at the request of the Council to provide additional information about corporate ownership and other forms of control of allocations. This information allows managers to better characterize current levels of ownership concentration to assist in defining an excessive share, and to monitor and enforce any future restriction on share levels in the fisheries.

Excessive Consolidation: In an economic context, it is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

Excessive Share: For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap that is intended to prevent a firm or entity from exerting market power. The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

ITQ (Individual Transferrable Quota): A form of output control in which harvesting privileges are allocated to individual fishermen.

ITQ Quota Share: Percent of the total quota held by each ITQ permit holder.

Monopoly: A market situation where there is only one seller of a product, and where there are no close substitutes of the product.

Monopsony: A market situation where there is only buyer of a product.

National Standards (NS): The National Standards are principles that must be followed in any fishery management plan to ensure sustainable and responsible fishery management. As mandated by the Magnuson-Stevens Fishery Conservation and Management Act, NMFS has developed guidelines for each National Standard. When reviewing fishery management plans, plan amendments, and regulations, the Secretary of Commerce must ensure that they are consistent with the National Standard guidelines. See section 8.0 of this document for more detail on the 10 National Standards under the MSA. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 4 - Allocations: Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (a) fair and equitable to all such fishermen; (b) reasonably calculated to promote conservation; and (c) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privilege. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 5 - Efficiency: Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 8 - Communities: Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirement of paragraph (2) [i.e., National Standard 2], in order to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

Oligopoly: A market situation with relatively few sellers who are mutually interdependent in their marketing activities (e.g., some food processing industries are oligopolistic).

Oligopsony: A market situation where there are a few buyers of a product and each of the few buyers exerts a disproportionate influence on the market.

Ownership Data: This term is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data (see above)."

Quota Share Ownership: The quota share held by an individual or entity. In a manner of speaking, "ownership" usually represents a property right in perpetuity or for as long as the owner wants. However, under MSA there are some important policy issues with respect to duration in the design of limited access privilege programs (e.g., ITQs). The MSA stipulates that limited access privileges may be revoked or limited in accordance with the MSA, they do not confer rights of compensation, and they do not create any ownership of a fish before it is harvested [Section 303A(b)] (NMFS 2007).

Transferability Rules: These allow ITQ allocation holders to buy, sell, give away (permanent transfer ITQ quota share) or lease their privileges (temporarily transfer cage tags). When quota is leased out, cage tags are temporarily transferred from the ITQ quota allocation holder (lessor) to the person leasing cage tags (lessee).

Two-Tier Quota: Quota system that aligns supply in the fisheries with market demand (described under excessive share alternatives 5 and 6). Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the annual catch target (ACT) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

Models for determination of quota ownership (or share totals for ownership quota share) and combined level (ownership plus leasing of cage tags):

Ownership Percentage Models: There are models for determination of quota ownership (or share totals for ownership quota share) and the combined level (ownership plus leasing of cage tags)

Net Actual Percentage Model - Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

Cumulative 100% Model - Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels:

Individual/Business Level - Smallest unit at the individual level or business (if an individual owner cannot be identified);

Family Level **(individual / business level + family level)*** - Includes any family associations that are not already accounted at the individual business level ; and,

Corporate Officer Level **(individual / business level + family level + corporate officer level)** - Includes association through corporate officer's that are not accounted for in the other levels.

*On the "Surfclam/Ocean Quahog Individual Transferable Quota (ITQ) Ownership Form," *Immediate Family* is defined as: Father, mother, husband, wife, son, daughter, brother, sister, grandfather, grandmother, grandson, granddaughter, father-in-law, or mother-in-law (https://www.greateratlantic.fisheries.noaa.gov/aps/forms.html).

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4.0 INTRODUCTION AND BACKGROUND

This document was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA)[6] and National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ), and the Atlantic Surfclam and Ocean Quahog FMP. The management regime and objectives of the fisheries are detailed in the FMP, including any subsequent amendments are available at: http://www.mafmc.org, and briefly described below.

4.1 PURPOSE AND NEED OF THE ACTION

The primary purpose of this action is to implement measures under the MSA to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. National Standard 4 states that "... *If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges*." In 1990 Amendment 8 implemented the ITQ program for the Atlantic surfclam and ocean quahog fisheries. Amendment 8 did not include a specific cap or measures that limited the maximum amount of shares that could be owned by an individual, corporation, or entity (MAFMC 1988).

In the 27 years since the implementation of the ITQ program, the number of firms or entities participating in these two fisheries have declined and action is needed to avoid excessive share concentration by defining what constitutes an excessive share in the Atlantic surfclam and ocean quahog ITQ privileges to ensure the FMP is in compliance with the MSA. In 2016, a new data collection protocol was implemented by NMFS that allows managers to better assess quota ownership and concentration levels.[7]

For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the MSA, including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap that is intended to prevent a firm or entity from exerting market power. The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

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[6] Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSRA), and available at: http://www.nmfs.noaa.gov/sfa/magact/MSA_Amended_2007%20.pdf

[7] Atlantic Surfclam and Ocean Quahog Information Collection Program Requirements became effective on January 1, 2016. The Atlantic Surfclam and Ocean Quahog Information Collection Program was implemented at the request of the Council to provide additional information about corporate ownership and other forms of control of allocations. This information allows managers to better characterize current levels of ownership concentration to assist in defining an excessive share, and to monitor and enforce any future restriction on share levels in the fisheries.

In an economic context, excessive consolidation is a level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopsony), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

In addition, this action includes measures to revise the process for specifying multi-year management measures. This action would allow multi-year management measures to be set for a maximum number of years consistent with the approved NRCC stock assessment schedule. This approach is expected to provide for better consistency and administrative efficiency. This action would also require periodic review of the excessive cap share level to be made and allow adjustments to the frameworkable provisions in the FMP.

Lastly, this action includes revisions to the goals and objectives of the FMP. The Council is undergoing a process to review and possibly revise goals and objectives for all its managed fisheries and FMPs. The Council initiated a process to consider revised goals and objectives for the FMP in support of its 2014-2018 Strategic Plan and 2017 Implementation Plan (http://www.mafmc.org/strategic-plan). This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they are consistent with today's fisheries and management issues. The issue is included in the Excessive Shares Amendment to take advantage of efficiencies in timing and public review.

There are currently 16 limited catch shares programs in the country. 13 of these programs have specific excessive shares caps. Two other programs do not specify an excessive shares cap, but they have other measures in place to avoid excessive accumulation of share or allocation. The surfclam and ocean quahog fisheries are the only federally-managed fisheries in the country that do not have measures to limit share accumulation.[8] See Appendix A for additional information on excessive share caps for catch shares programs in the USA.

4.2 FMP OBJECTIVES

4.2.1 Current FMP Objectives

The original FMP objectives were adopted through Amendment 8 to the Atlantic Surfclam and Ocean Quahog FMP, which implemented the ITQ system in 1990 (MAFMC 1988). The FMP objectives have remained unchanged since that time. This amendment proposed modification of objectives. The current FMP objectives are as follows:

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.

[8] Section 303A of the MSA has additional requirements for catch share programs adopted after January 12, 2007.

2. Simplify to the maximum extent the regulatory requirements of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

After the ITQ system for the clam's fisheries was implemented in 1990, the Regional Administrator granted experimental status to the small-scale eastern Maine ocean quahog fishery that was operating in the EEZ. Amendment 10 fully integrated the Maine fishery into the Atlantic Surfclam and Ocean Quahog FMP. The specified objectives under Amendment 10 (MAFMC 1998a) did not change the overall FMP objectives adopted under Amendment 8. Specified FMP objectives for the eastern Maine ocean quahog fishery under Amendment 10 are as follows:

1. Protect the public health and safety by the continuation of the State of Maine's PSP (Paralytic Shellfish Poisoning) monitoring program for ocean quahogs harvested from the historical eastern Maine fishery.
2. Conserve the historical eastern Maine portion of the ocean quahog resource.
3. Provide a framework that will allow the continuation of the eastern Maine artisanal fishery for ocean quahogs.
4. Provide a mechanism and process by which industry participants can work cooperatively with Federal and State management agencies to determine the future of the historical eastern Maine fishery.

4.2.2 Proposed Revisions to FMP Objectives

As indicated in section 4.1, the Council is undergoing a process to review and revise goals and objectives for all their managed fisheries and FMPs. The Council initiated a process to consider revised goals and objectives for the Atlantic Surfclam and Ocean Quahog FMP in support of the 2014-2018 Strategic Plan and 2017 Implementation Plan. This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they are consistent with today's fisheries and management issues. The consideration of revising the FMP goals and objectives is separate from the Council's consideration of excessive share measures. This issue is included in the Excessive Shares Amendment to take advantage of efficiencies in timing and other resources.

Feedback and industry input on the FMP goals and objectives were gathered in a two-stage process. First, when the Council conducted scoping hearings to solicit public input on the development of the Excessive Shares Amendment, feedback on FMP goals and objectives was also gathered. Second, the Council contracted the Fisheries Leadership & Sustainability Forum (Fisheries Forum) to develop a process to support the Council's review of FMP goals and objectives. The Fisheries Forum collected feedback from the Council's Surfclam and Ocean Quahog Committee, the

Council's Surfclam and Ocean Quahog Advisory Panel, and state agency representatives from states engaged in the fisheries that were not represented on the Committee (Maine and Massachusetts). The Fisheries Forum synthetized all feedback gathered to identify major ideas and themes. The Council's Surfclam and Ocean Quahog Fishery Management Action Team (FMAT) reviewed this information and developed recommendations for new FMP goals and objectives. The Council reviewed the FMAT recommendations at the October 2017 Council meeting and approved the FMAT recommendations for inclusion in the public hearing document for this amendment in order to gather further input during the public hearing process. These recommendations are listed below. For additional details on the rationale for these recommendations see Appendix B.

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.

Objective 2.1: Promote compatible regulations between state and federal entities.

Objective 2.2: Promote coordination with the New England Fishery Management Council.

Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.

Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.

Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.

Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.

Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

4.3 MANAGEMENT UNIT

The management unit is all Atlantic surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) in the Atlantic EEZ. Amendment 10 also established a management regime specific to the eastern Maine fishery for a zone north of 43° 50' north latitude.

4.4 AMENDMENTS AND OTHER FMP MODIFICATIONS

The Council has been involved in surfclam and ocean quahog management since its first Council meeting (September 1976). An overview of the original FMP, amendments, and framework actions

that have affected management of surfclams and ocean quahogs are summarized in Table 1. These actions are available on the Council's website at: http://www.mafmc.org/.

Table 1. Summary of the history of the Atlantic Surfclam and Ocean Quahog FMP.

Year Approved	Document	Management Action(s)
1977	Original FMP	- Established management of surfclam and ocean quahog fisheries through September 1979 - Established quarterly quotas for surfclams - Established annual quotas for ocean quahogs - Established effort limitation, permit, and logbook provisions - Instituted a moratorium on entry into the surfclam fishery for one year to allow time for the development of an alternative limited entry system such as a "stock certificate" program
1979	Amendment 1	- Extended management authority through December 31, 1979 - Maintained the moratorium
1979	Amendment 2	- Extended the FMP through the end of 1981 - Divided the surfclam portion of the management unit into the New England and Mid-Atlantic Area - Introduced a "bad weather make up day" - Maintained the moratorium in the Mid-Atlantic Area
1981	Amendment 3	- Extended the FMP indefinitely - Imposed a 5.5" surfclam minimum size limit in the Mid-Atlantic Area - Expanded the surfclam fishing week in the Mid-Atlantic Area to Sunday - Thursday from Monday – Thursday - Established a framework basis for quota setting - Proposed a permit limitation system to replace the moratorium which was disapproved by NMFS - NMFS extended the moratorium
1984	Amendment 4 (Not approved)	- Amendment 4 was implemented on an emergency basis for 180 days beginning 1 July 1984 - Provided that any unharvested portion of a bimonthly allocation be added to the immediately following bimonthly allocation rather than being prorated over all remaining bimonthly periods and that trip and weekly limits be by vessel classes based on relative fishing power - NMFS subsequently determined that the document was not structurally complete for review
1985	Amendment 5	- Allowed for revision of the surfclam minimum size limit provision - Extended the size limit throughout the entire fishery - Instituted a requirement that cages be tagged
1986	Amendment 6	- Divided the New England Area into the Nantucket Shoals and Georges Bank Areas, the dividing line being 69° W Longitude - Combined the provisions of Amendment 4 with the Mid-Atlantic Council's Amendment 6 into one document - Replaced the bimonthly quotas with quarterly quotas - Eliminate the weekly landing limits for the Nantucket Shoals Area - Clarified the quota adjustment provisions for the Nantucket Shoals and Georges Bank Areas - Established one landing per trip provision

Table 1 (Continued). Summary of the history of the Atlantic Surfclam and Ocean Quahog FMP.

Year Approved	Document	Management Action(s)
1987	Amendment 7	- Changed the quota distribution on Georges Bank to equal quarterly quotas - Revised the roll over provisions
1990	Amendment 8	- Replaced the regulated fishing time system in the surfclam and ocean quahog fisheries with an ITQ system
1996	Amendment 9	- Revised the overfishing definitions for surfclams and ocean quahogs in response to a scientific review by NMFS
1998	Amendment 10	- Provided management measures for the small artisanal fishery for ocean quahogs (mahogany clams) off the northeast coast of Maine
1998	Amendment 11	- Achieved consistency among Mid-Atlantic and New England FMPs on vessel replacement and upgrade provisions, permit history transfer and splitting and renewal regulations for fishing vessels issued Northeast Limited Access Federal Fishery permits
1999	Amendment 12	- Brought the FMP into compliance with the new and revised National Standards and other requirements of the 1996 Sustainable Fisheries Act - Established a framework adjustment process - Implemented an Operator Permit requirement for fishermen that did not already have them for other fisheries - The Regional Administrator partially approved Amendment 12 with the exceptions of the proposed surfclam overfishing definition and the fishing gear impacts to (Essential Fish Habitat) EFH section
2003	Amendment 13	- Addressed various disapproved sections of Amendment 12
2007	Amendment 14	- Standardized bycatch reporting methodology
2007	Framework 1	- Addressed issues related to Vessel Monitoring Systems (VMS) and enforcement
2011	Amendment 16	- Established Annual Catch Limits (ACLs) and Accountability Measures (AMs)
2015	Amendment 15	- Standardized Bycatch Reporting Methodology
2015	Amendment 18	- Eliminated the requirement for vessel owners to submit "did not fish" reports for the months or weeks when their vessel was not fishing - Removed some of the restrictions for upgrading vessels listed on Federal fishing permits
2016	Amendment 17	- Established a cost recovery program for the ITQ program, as required by the MSA - Removed the optimum yield ranges from the management plan and changed how biological reference points are incorporated into the FMP
2017	Amendment 19	- Implemented management measures to prevent the development of new, and the expansion of existing, commercial fisheries on certain forage species in the Mid-Atlantic
2018	Framework 2	- Established a process for setting constant multi-year Acceptable Biological Catch (ABCs) limits for Council-managed fisheries - Clarified that the Atlantic Bluefish, Tilefish, and Atlantic Mackerel, Squid, and Butterfish FMPs will now automatically incorporate the best available scientific information in calculating ABCs (as all other Mid-Atlantic management plans do) rather than requiring a separate management action to adopt them Clarified the process for setting ABCs for each of the four types of ABC control rules

4.5 HISTORY OF THE ACTION

Court Case

The final rule implementing the surfclam and ocean quahog ITQ program became effective on September 30, 1990. Almost immediately, lawsuits were filed by groups of harvesters and processors challenging various features of the program, most notably the formula for allocating fishing privileges among fishery participants. The case *Sea Watch International v. Mosbacher* [Secretary of Commerce], 762 F. Supp. 370 (D.D.C. 1991), illustrates the major legal challenges to the initial allocation. In general, the plaintiffs in the case argued that the initial allocation was not fair and equitable and therefore in violation of National Standard 4 of the MSA and,

"The plaintiffs claimed that the initial allocation allowed particular individuals, corporations, or other entities to acquire an excessive share of fishing privileges. Plaintiffs alleged that the allocation would concentrate 40 percent of the annual catch quota for the ocean quahog fishery in two fishermen, and that fragmentation of the remaining shares would result in further consolidation as holders of small shares sold their interests, creating an impermissible restraint on competition."[9]

The court noted the 40 percent number "does give pause" but found the MSA has no definition of the term "excessive shares" and that the judgment of NMFS of what is excessive "deserves weight." Further, the court stated, "Even if the raw number measured a true economic market - which is by no means clear - a judgment of undue concentration could not be based on the mere existence of such a share possessed by the two largest participants." With that, the court dismissed the plaintiffs' argument.

Tracking Shares Concentration Following ITQ Plan Implementation

During the development of Amendment 8, the Council discussed in detail the requirements under National Standard 4.[10] During those discussions, the Council was advised by NOAA General Counsel (GC) that in order to address part (C) of National Standard 4, there was no legal requirement to put a specific cap (numeric cap) into Amendment 8. GC indicated that a cap is simply a tool to address the National Standard 4 part (C) and that if the Council could come up with an equally effective mechanism to meet that requirement, they could use that mechanism. The Council's intent under Amendment 8 was to have NMFS annually monitor the concentration of ITQ (as ITQ owners have to apply to NMFS to transfer ITQ) and if it seemed that excessive consolidation was occurring (i.e., an excessive share was being amassed), they would advise the U.S. Department of Justice (DOJ), which would then determine if antitrust laws were being violated (Joel McDonald Personal Communication, July 16, 2017).

[9] Northern Economics, Inc. 2019. Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council. March 2019.

[10] National Standard 4 states that '... *If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges*.'

As such, during the early period of the of the implementation of Amendment 8, the Council believed that NMFS could effectively monitor the concentration of ITQ ownership.

While the court case upheld Amendment 8 in 1991 - one year after the ITQ was implemented - it became clear over time to NMFS that this administrative process did not work. The creation of new business entities (e.g., LLC's, etc.) with ITQ ownership, and the lack of a regulatory mechanism (by NMFS) to identify corporate ownership or business partnerships across individuals or entities involved hampered the ability to determine whether there was a concentration of quota ownership, and whether competitive conditions were being eroded in the quota share market over time.[11] Therefore, the review of industry concentration could not be conducted.

NMFS recognized they could no longer conclude that the ITQ program was carried out in such a manner to prevent someone from acquiring an excessive share of the fishing privileges and advised the Council of these concerns. GC indicated that the Council needed to put at least two regulatory components in place: one to identify the individuals behind the corporate entities listed as the owner of the ITQ, and an ownership cap or other control mechanism to keep individuals from acquiring the level of ITQ ownership that the Council deems to be "excessive." [12] It is important to recognize that MSA did not address this issue by incorporating definitions from antitrust law or simply relying on enforcement of antitrust law. Rather, MSA used the term "excessive share" - a term left undefined in the statute. As noted in a 2007 NMFS guidance document on limited access privilege programs, while share levels exceeding antitrust standards would clearly represent an excessive share, factors such as other MSA requirements and National Standards can lead a Council to a more restrictive share limit than antitrust law may otherwise permit. [13]

During the development of alternatives for the Excessive Shares Amendment, staff at the Council and GARFO (including GC) spoke with the Antitrust Division of the DOJ about the role that they might play in the monitoring of excessive shares in the surfclam and ocean quahog fisheries. The DOJ indicated that their Business Review Process does provide pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process[14] has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment, making it an unfeasible vehicle for ongoing monitoring of quota share ownership.[15] For additional steps taken by the Council and NMFS regarding the excessive shares issue, see "Chronology of this Action" section below.

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[11] For example, one person could form a couple of corporations and hold and acquire ITQ and it could not be determined whether or not this represented an excessive share since the ITQs would appear to be owned by legally separate entities.

[12] As noted in the *Sea Watch International* case, even though the initial ITQ program relied upon existing antitrust law to define excessive shares, NMFS and the Council retained the ability to modify the FMP and associated regulations, "without the permission of the ITQ holders." 762 F. Supp. at 380.

[13] NOAA Technical Memorandum NMFS-F/SPO-86, The Design and Use of Limited Access Privilege Programs, at 53-60 (NMFS 2007).

[14] For a detailed description of the Business Review process of the DOJ see: https://www.justice.gov/atr/business-reviews

[15] Sarah Heil, letter to Chis Moore, PhD, June 1, 2018.

Chronology of this Action

This section presents in chronological order major steps taken by the Council and/or NMFS in addressing the excessive shares issue.

1990

- Surfclam and ocean quahog ITQ program is implemented.

2002

- Discussion of excessive shares in these fisheries began as early as December 2002 with a Government Accountability Office (GAO) report "Individual Fishing Quotas: Better Information Could Improve Program Management." [16] The December 2002 GAO report stated:
  - Surfclam and ocean quahog quota consolidation is greater than NMFS data indicate. According to NMFS officials and others knowledgeable about the fishery, the quota holder of record (i.e., the individual or entity under whose name the quota is listed) is often not the entity that controls the use of the quota. Some families hold quota under the names of more than one family member; some parent corporations hold quota under the names of one or more subsidiaries; some entities hold quota under the name of one or more incorporated vessels; and some financial institutions serve as transfer agents and hold quota on behalf of others or in lieu of collateral for loans.
  - The governing rules of each program may have affected the extent of consolidation and the information collected. However, without clear and accurate data on quota holders and fishery-specific limits on quota holdings, it is difficult to determine whether any quota holdings in a particular fishery would be viewed as excessive, as prohibited by the MSA.
  - NMFS does not gather sufficient information or periodically analyze the data it does collect on surfclam/ocean quahog and Wreckfish quota holders to determine (1) who actually controls the use of the quota and (2) whether the holder is a foreign individual or entity. Furthermore, while each fishery is different, the regional councils have not defined the amount of quota that constitutes an excessive share in the surfclam/ocean quahog and wreckfish IFQ programs. Different program objectives and the political, economic, and social characteristics of each fishery make it difficult to define excessive share. However, without the information on who controls quota and defined limits on quota accumulation, NMFS cannot determine whether eligibility requirements are being met or raise questions as to whether any quota holdings are excessive.

[16] The U.S. Government Accountability Office (GAO; https://www.gao.gov/) is an independent, nonpartisan agency that works for Congress. Often called the "congressional watchdog," GAO examines how taxpayer dollars are spent and provides Congress and federal agencies with objective, reliable information to help the government save money and work more efficiently.

2003

- In 2003, NMFS responded to several members of Congress about the GAO report. NMFS indicated that it would urge the Council to develop a plan amendment that limits the shares that an individual may hold.

2004

- A 2004 NMFS report (by Doug Christel) was written in response to the GAO report, and highlighted some of the additional information needs in these fisheries. "This report concludes that the degree of concentration in the ITQ program described by the GAO is due to the amount of information available. Current data collection by NMFS is insufficient to assess ownership concentration to the extent necessary to monitor excessive shares within the ITQ program. This is because limited information is collected on corporate structure or related business entities." In addition, "This report recommends that further information be collected regarding allocation ownership within the ITQ program."

2004 - 2011

- During this time period, several FMAT meetings were held to discuss this issue. Periodically, the Council was updated on FMAT activities. But during this time period, no decisions were made to move this action forward to the Council.

2011

- Compass Lexecon Report concluded that, "The evidence we analyzed does not support a conclusion that market power is currently being exercised through withholding of quota in the SCOQ [surfclam and ocean quahog fisheries]." However, the report indicates that, "We do not analyze whether market power is exercised through the withholding of harvesting or processing, or through exclusionary conduct other than conduct involving quota ownership."

- The Compass Lexecon Report was reviewed by the CIE. [Summary of Findings by the Center for Independent Experts Regarding Setting Excessive Share Limits for ITQ Fisheries. Northeast Fisheries Science Center Reference Document 11-22]. The review noted that:

    - Measures of industrial concentration in the surfclam and ocean quahog fisheries (the Herfindahl-Hirschman index or HHI) suggests that marketing power may exist in these fisheries, particularly in its harvesting and processing sectors, but less so in quota holdings. These concentration measures are only indicative of the possibility of market power. They do not establish that it actually exists.
    - Implementation of the method proposed by the Technical Group requires at least the following data: quota ownership and control, processing volumes and capacity, size of the relevant market.
    - The method proposed by the Technical Group is based on the HHI, which means that evaluation of potential market power is consistent with what is done in other industries. However, in order to apply the method, more data are needed along with a better understanding of the industry.

- The Technical Group should have paid more attention to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. This may be of greater concern than the monopoly problem.

2012

- The February 2012 Surfclam and Ocean Quahog Committee meeting discussed next steps for the then-numbered Amendment 15.
- At that meeting, GC Joel MacDonald advised that an information collection program could be implemented by NMFS without a Council FMP Amendment under authority granted in section 402(a) of the MSA.
- The Committee voted to split Amendment 15 into several parts: 1) move forward with cost recovery, EFH, and the ocean quahog biological reference point update in Amendment 15, 2) request that NMFS develop an information collection program, and 3) move development of an excessive shares cap to the next Amendment.

2013

- A "Data Collection Protocol" was developed for the Council to consider that would provide the data needed to understand ownership and control of the quota allocations in the surfclam and ocean quahog fisheries.
- The Council approved the "Data Collection Protocol."

2015

- The data collection protocol was implemented.

2016

- Ownership data collection began in 2016.

2017

- An FMAT was reformed to work on the Excessive Shares Amendment.

2018

- June 2018: Range of alternatives developed and presented to the Surfclam and Ocean Quahog Committee and Council.

2019

- March 2019: Surfclam and Ocean Quahog Advisory Panel and Committee provided feedback on the public hearing document.
- April 2019: Council reviewed public hearing document and instructed FMAT to make some modifications to the document and bring it back to the Committee for review.

5.0 MANAGEMENT ALTERNATIVES

This amendment considers a range of alternatives to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. This amendment also considers requirements for the periodic review of implemented excessive cap level. Lastly, this action considers revisions to the process for specifying multi-year management measures, and future framework actions to make modifications to the excessive shares cap level.

In recognition of the diversity of potential solutions to these goals, a range of possible options for management measures ("alternatives") were developed for consideration. This approach complies with the statutory requirements of the NEPA to include a "range of alternatives" when evaluating the environmental impacts of federal actions. Section 5.1 describes the excessive shares alternatives, section 5.2 describes the periodic excessive shares review alternatives, section 5.3 describes the framework alternatives, and section 5.4 describes multi-year management measures alternatives. In addition, several alternatives were considered by the Council and rejected for further analysis. These "considered but rejected" alternatives are described in section 5.5. The complete analyses of the biological, economic, and social impacts of the alternatives is presented in section 7.0 of this document.

Comprehensive descriptions of the current regulations for surfclam and ocean quahog as detailed in the Code of Federal Regulations (CFR) are available here: http://www.greateratlantic.fisheries.noaa.gov/regs/fr.html.

5.1 Excessive Share Alternatives

The Council is required to define measurable criteria for what constitutes an excessive share in the Atlantic surfclam and ocean quahog ITQ privileges, to ensure the FMP is compliant with the MSA (see section 4.1 for additional information).

At this point it is unclear, if any of the alternatives under consideration will result in the need for any individual, entity, or corporation to divest. Therefore, there are no alternatives in this document that describes specific divestment mechanisms in the event that an individual or entity has accumulated quota share ownership in excess of the quota ownership levels presented in the alternatives described below. However, the Council, can consider divestment mechanisms if they find this necessary, or they can leave it to NMFS to address divestment options and mechanism if they select an alternative that has ownership entities above the selected excessive shares cap.

The Compass Lexecon Report and associated Center for Independent Experts (CIE) review indicated a need for reliable information regarding both ownership and control of quota in the surfclam and ocean quahog fisheries. Information showing detailed quota transfers and ownership relationships among final quota holders is important in assessing ownership and control (Mitchell et al., 2011, Walden 2011).

Participants in these fisheries have reported that they are various types of transactions involving ITQs that commonly occur, including temporary and permanent ITQ transfers, long-term ITQ leases (e.g., five years or more) and transfers of bushel tags from bank lenders and between related

and unrelated business entities. As such, it is important to consider these complex contracting business practices that occur in these fisheries. Furthermore, as indicated in the Compass Lexecon Report:

> *"The need for harvesters to hold quota at the time of harvesting raises further complications: some harvesters own or contract for their own quota, whereas in other cases processors obtain quota and transfer it without charge to their harvesters (which may be [either] affiliated or independent). When the processor owns quota or contracts for quota on behalf of a harvester, the transfer data will show the quota has been transferred to a harvester, but will not show whether the processor retains control of the quota in such transactions ("control" in this context means the power to decide whether the quota will be used to harvest clams). A complete understanding of the actual ownership and control of quota requires analysis of the contracts under which quota were transferred to the final owner or holder. An additional problem arises from the reporting of quota when used. The owner of quota is supposed to report to NMFS the specific tags (quota) that are used throughout the season. However, in many instances, it is not the recorded owner but another entity that reports the quota used. This is most likely a problem with related entities reporting the use of quota, which is another aspect of determining final quota ownership or control"* (Mitchell et al. 2011).

The Atlantic Surfclam and Ocean Quahog Information Collection Program was designed to collect information to assess ownership and control of the quota following transfers in the surfclam and ocean quahog fisheries. However, some industry members have reported that they would not disclose specific details on long-term ITQ leases on those data collection forms,[17] as they see it as a confidential business practice. The ownership data collected for 2016 and 2017 includes very limited information on long-term leases, which suggests a lack of interest by industry members in reporting this information. Because of the lack of data to assess control from the context of "the power to decide whether the quota will be used to harvest clams," in this analysis combined "control" is used in the context of the possession of the cage tags, which is the power to decide if they will be used to harvest clams.[18]

5.1.1 Alternative 1: No Action/*Status Quo*

Under the no action alternative for excessive shares (alternative 1), the current management approach regarding excessive shares (i.e., share accumulation) would continue. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. The FMP would rely only on federal anti-trust provisions.

[17] Long-term contracts.

[18] In the scallop fishery, a similar concept is used to tabulate quota accumulation levels, that is, "if you touch it" (hold the tags), you have the ability to make decisions about whether those tags are fished or not.

5.1.2 Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)

Under alternative 2, a single quota share cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags)[19] throughout the year.[20] Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. Participants in these fisheries have reported that they are various types of transactions involving ITQs that commonly occur, including temporary and permanent ITQ transfers, long-term ITQ leases (e.g., five years or more) and transfers of bushel tags from bank lenders and between related and unrelated business entities.

This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

Note: The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and/or monitor any particular excessive shares cap level.[21]

5.1.2.1 Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 2.1, the single quota share caps would be based on the highest level of quota share held by an individual or entity reported in the ownership data[22] for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period,[23] as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. Note that the values in Tables 2 and 3 were rounded up for the monitoring process (e.g., 27.3 was rounded up to 28 and 27.7 was also rounded up to 28). These values were only rounded up because rounding down could potentially result in an existing entity being over the cap merely because of the rounding approach. The caps based on ownership data from 2016 to 2017 would be:

For surfclams –

- Option A: At the individual/business level, the cap would be 28% under all models
- Option B: At the family level, the cap would be 28% under all models

[19] There would be no limit of how much annual allocation (cage tags) an individual or entity could use or transfer during the fishing year.
[20] All excessive share alternatives are applicable throughout the year.
[21] See Definitions and Terminology at the end of Section 2.0 for more information on these choices. More detailed information on these choices is also found in section 7.0.
[22] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."
[23] On average, for the 2016-2017 period, 67% of the surfclam quota and 58% of the ocean quahog quota were landed (see Table 4 in section 6.0).

- Option C: At the corporate officer level, the cap would be 28% under all models

For ocean quahogs –

- Option A: At the individual/business level, the cap would be 22% under all models
- Option B: At the family level, the cap would be 22% under all models
- Option C: At the corporate officer level, the cap would be 22% under all models

If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in the fisheries (i.e., four large entities at 28%, 28%, 28%, and 16%). If fully consolidated , a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in the fisheries (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%).[24] The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.2.2 Sub-Alternative 2.2: Quota share cap at 49%

Under sub-alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.2.3 Sub-Alternative 2.3: Quota share cap at 95%

Under sub-alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

[24] The resulting number of minimum entities under excessive shares alternatives 2 through 4 assume that market demand equals supply. When this is not the case, the leasing market could be disrupted (because available quota is larger than product demand) which could result in smaller firms or entities not associated with a processor be driven out of business. In addition, it is also possible that under all alternatives evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

Table 2. Surfclam maximum quota share ownership and combined level (quota share ownership plus leasing of annual allocation or cage tags) at the individual/business level, family level, and corporate officer level for various data tabulation models, 2016-2017.

Surfclam Values							
Ownership Percentage Model		**Affiliation Levels**					
		Individual / Business Level		**Family Level** (individual / business level + family level)		**Corporate Officer Level** (individual / business level + family level + corporate officer level)	
		2016	**2017**	**2016**	**2017**	**2016**	**2017**
Net Actual Percentage	Owned	28	28	28	28	28	28
	Combined (Ownership + Leasing)	28	28	33	33	44	43
Cumulative 100% Model	Owned	28	28	28	28	28	28
	Combined (Ownership + Leasing)	48	46	49	47	49	47

Terminology

1) Net Actual Percentage Model - Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

2) Cumulative 100% Model - Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels: ***Individual/Business Level -*** Smallest unit at the individual level or business (if an individual owner cannot be identified); ***Family Level -*** Includes any family associations that are not already accounted at the individual business level; and ***Corporate Officer Level -*** Includes association through corporate officer's that are not accounted for in the other levels.

Source: Analysis and Program Support Division, Greater Atlantic Regional Fisheries Office (GARFO).

Table 3. Ocean quahog maximum quota ownership and combined level (quota share ownership plus leasing of annual allocation or cage tags) at the individual/business level, family level, and corporate officer level for various data tabulation models, 2016-2017.

Ocean Quahog Values							
Ownership Percentage Model		**Affiliation Levels**					
		Individual / Business Level		**Family Level** (individual / business level + family level)		**Corporate Officer Level** (individual / business level + family level + corporate officer level)	
		2016	**2017**	**2016**	**2017**	**2016**	**2017**
Net Actual Percentage	Owned	22	22	22	22	22	22
	Combined (Ownership + Leasing)	29	25	29	28	37	39
Cumulative 100% Model	Owned	22	22	22	22	22	22
	Combined (Ownership + Leasing)	38	41	38	41	38	41

Terminology

1) Net Actual Percentage Model - Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

2) Cumulative 100% Model - Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels: ***Individual/Business Level -*** Smallest unit at the individual level or business (if an individual owner cannot be identified); ***Family Level -*** Includes any family associations that are not already accounted at the individual business level; and ***Corporate Officer Level -*** Includes association through corporate officer's that are not accounted for in the other levels.

Source: Analysis and Program Support Division, Greater Atlantic Regional Fisheries Office (GARFO).

5.1.3 Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)

Under alternative 3, a cap based on combined values for quota share ownership plus leasing of annual allocation (cage tags) would be established separately for surfclams and ocean quahogs. Since the cap under this alternative is based on ownership plus leasing of annual allocation (cage tags), it accounts for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing)[25] that are prevalent in the fisheries when setting the cap limit.

5.1.3.1 Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 3.1, the combined caps would be based on the highest level of quota share ownership plus leasing of annual allocation (cage tags) by an individual or entity reported in the ownership data[26] for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period, as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The combined caps under this alternative would depend on the determination of combined levels (quota share ownership plus cage tag leasing) under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The combined caps based on ownership data from 2016 to 2017 would be:

For surfclams -

- Option A: At the individual/business level, the cap would be:
  - 28% under the combined net actual percentage model
  - 48% under the combined cumulative 100% model
- Option B: At the family level, the cap would be:
  - 33% under the combined net actual percentage model
  - 49% under the combined cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 44% under the combined net actual percentage model
  - 49% under the combined cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
  - 29% under the combined net actual percentage model
  - 41% under the combined cumulative 100% model
- Option B: At the family level, the cap would be:

[25] The Compass Lexecon Report and CIE review indicated a need for reliable information regarding both ownership and control of quota in the surfclam and ocean quahog fisheries. Information showing detailed quota transfers and ownership relationships among final quota holders is important in assessing ownership and control (Mitchell et al., 2011, Walden 2011).

[26] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

    - 29% under the combined net actual percentage model
    - 41% under the combined cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
    - 39% under the combined net actual percentage model
    - 41% under the combined cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.3.2 Sub-Alternative 3.2: Combined cap at 40%

Under sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.3.3 Sub-Alternative 3.3: Combined cap at 49%

Under sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.4 Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)

Under alternative 4, a two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of

market power that could be derived through both quota ownership and contractual control of quota. Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex contracting business practices that occur in these fisheries**.**

5.1.4.1 Sub-Alternative 4.1: Two-part cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage tags) would be based on the highest levels reported in the ownership data[27] for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period, as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The two-part cap based on ownership data from 2016 to 2017 would be:

For surfclams -

- Option A: At the individual/business level, the cap would be:
  - 28% ownership / 28% combined under the net actual percentage model
  - 28% ownership / 48% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 28% ownership / 33% combined under the net actual percentage model
  - 28% ownership / 49% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 28% ownership / 44% combined under the net actual percentage model
  - 28% ownership / 49% combined the cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
  - 22% ownership / 29% combined under the net actual percentage model
  - 22% ownership / 41% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 22% ownership / 29% combined under the net actual percentage model
  - 22% ownership / 41% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 22% ownership / 39% combined under the net actual percentage model
  - 22% ownership / 41% combined the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual

[27] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.4.2 Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation

Under sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data[28] for each fishery (i.e., surfclams and ocean quahogs) during the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for 2016-2017 to allow for additional consolidation (Tables 2 and 3). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. As with sub-alternative 4.1, the two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The two-part cap based on ownership data from 2016 to 2017 would be:

(*Note: these values were calculated by adding 15% for anticipated growth to the values presented under sub-alternative 4.1*)

For surfclams -

- Option A: At the individual/business level, the cap would be:
  - 43% ownership / 43% combined under the net actual percentage model
  - 43% ownership / 63% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 43% ownership / 48% combined under the net actual percentage model
  - 43% ownership / 64% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 43% ownership / 59% combined under the net actual percentage model
  - 43% ownership / 64% combined under the cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
  - 37% ownership / 44% combined under the net actual percentage model
  - 37% ownership / 56% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 37% ownership / 44% combined under the net actual percentage model
  - 37% ownership / 56% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 37% ownership / 54% combined under the net actual percentage model

[28] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

- 37% ownership / 56% combined under the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.4.3 Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%

Sub-Alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. This alternative could potentially result in a minimum of four entities (if fully consolidated) participating in the fisheries (i.e., four large entities at 30%, 30%, 30%, and 10% ownership quota share cap). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.5 Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Under alternative 5, the cap would be 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags), plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the annual catch target (ACT) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

The 40% cap under this alternative is based on recommendations found in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). “In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails.” And “An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels” (Walden 2011).

This alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). The FMAT noted that the “two-part system” (i.e., cap on ownership plus Quota

A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of Quota A and Quota B shares is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. Lastly, this alternative could potentially result in a minimum of three large entities (if fully consolidated) participating in the fisheries (i.e., 40%, 40%, and 20%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

Box 5.1.5 below shows a hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work the first year of implementation (year 4) for surfclams and ocean quahogs. In this example, the same overall quota levels that have been in place for surfclams and ocean quahogs for the past 15 years are used in year 4. In addition, under this example a 3-year average (for years 1-3) is used to derive Quota A shares for year 4. The difference between the overall ACT level and Quota A shares for year 4 is used to determine the Quota B shares level for that year.

As shown in Box 5.1.5, the overall quota allocated to each fishery in bushels or number of issued cage tags do not change in year 4 when compared to prior years. However, while in years 1-3, the overall number of cage tags issued to each fishery (i.e., corresponding to the quota for each fishery; 106,250 cage tags for surfclams and 166,656 cage tags for ocean quahogs) would be released at the onset of the fishing year, under this alternative, only the Quota A shares and associated number of cage tags for that quota would be released at the onset of the fishing year and Quota B shares would be released when Quota A shares are used/exhausted.[29] As an example, for surfclams, Quota A shares, 2.352 million bushels or 73,500 cage tags would be released at the beginning on the fishing year 4, when this quota and associated number of cage tags have been used, then Quota B shares of 1.048 million bushels or 32,750 cage tags would be released that same fishing year (year 4). While under this alternative, the release of the quota (and associated cage tags) is split into two components (Quota A shares and Quota B shares), the overall quota level and number of cage tags available during the entire fishing year 4 is identical to that from prior fishing years (years 1-3).

[29] If this alternative is implemented, NMFS will have to determine how to release Quota B shares to allocation holders at the time the B shares are released.

Box 5.1.5. Hypothetical derivation of Quota A shares and Quota B shares (and cage tags) for surfclams and ocean quahogs under alternatives 5 and 6.				
Year	**Quota Million bushels**	**Landings Million bushels**	**Quota A shares Million bushels**	**Quota B shares Million bushels**
Atlantic surfclams				
1	3.400 (106,250 cage tags)	2.364 (73,875 cage tags)	NA	NA
2	3.400 (106,250 cage tags)	2.354 (73,563 cage tags)	NA	NA
3	3.400 (106,250 cage tags)	2.339 (73,094 cage tags)	NA	NA
4	3.400 (106,250 cage tags)	NA	2.352 (73,500 cage tags)	1.048 (32,750 cage tags)
Ocean quahogs				
1	5.333 (166,656 cage tags)	3.196 (99,875 cage tags)	NA	NA
2	5.333 (166,656 cage tags)	3.007 (93,968 cage tags)	NA	NA
3	5.333 (166,656 cage tags)	3.075 (96,094 cage tags)	NA	NA
4	5.333 (166,656 cage tags)	NA	3.093 (96,656 cage tags)	2.240 (70,000 cage tags)

NA = not applicable or not available.

5.1.6 Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Under alternative 6, the cap would be 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

The two-tier quota under this alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

The FMAT noted that the "two-part system" (i.e., cap on ownership plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of Quota A and Quota B shares is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway

through the fishing year. Lastly, this alternative could potentially result in a minimum of three entities (if fully consolidated) participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

For a hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work for surfclams and ocean quahogs see section 5.1.5 above.

5.2 Excessive Shares Review Alternatives

5.2.1 Alternative 1: No Action/*Status Quo* (Review Process)

Under the no action alternative for excessive shares review (alternative 1), there would not be a requirement for periodic review of implemented excessive shares measures.

5.2.2 Alternative 2: Require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed

Allowing for a periodic review of excessive shares measures that the Council adopts would permit the Council to revise these measures if conditions in the fisheries change over time. Conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure or specific cap level established at an appropriate level now could over time become inefficiently high or low.

In order to facilitate any necessary modifications to the cap levels, the Council could recommend adding modification of the cap levels to the list of management actions that could be implemented via the framework adjustment process (alternative 5.3). However, if major changes to the overall excessive shares measures are needed, an amendment process will likely be needed.

This alternative would provide an enforceable provision for regular review and evaluation of the performance of the cap for the surfclam and ocean quahog ITQ fisheries. However, this alternative does not preclude the Council reviewing any implemented excessive shares measures before the official review time period (i.e., 10 year review period).

5.3 Framework Adjustment Process Alternatives

A framework is an action that adjusts measures that are within the scope and criteria established by the FMP within a range as defined and analyzed in the FMP. Amendment 12 to the Surfclam and Ocean Quahog FMP implemented a framework adjustment process that allows management measures to be added or modified through this streamline public process (MAFMC 1998b). The range of frameworkable management measure were subsequently revised in Amendment 16 to the FMP (MAFMC 2011). The list of possible management measures to be addressed via the framework adjustment process included in the FMP include (50 CFR §648.79):

- Adjustments within existing ABC control rule levels
- Adjustments to the existing MAFMC risk policy
- Introduction of new AMs, including sub-ACTs
- Description and identification of EFH (and fishing gear management measures that impact EFH)
- Habitat areas of particular concern
- Set-aside quota for scientific research
- VMS
- Suspension or adjustment of the surfclam minimum size limit

Frameworks typically take a minimum of 1-year to be completed; with a minimum of two framework meetings and approximately 4-6 months for rulemaking and implementation. Adding measures as frameworkable under the FMP in order to address potential future changes may provide for efficiencies in the process.

5.3.1 Alternative 1: No Action/*Status Quo* (Framework Adjustment)

Under the no action alternative (alternative 1), the list of management measures that have been identified in the FMP that could be implemented or adjusted via the framework adjustment process would remain unmodified.

5.3.2 Alternative 2: Add excessive shares cap levels to the list of measures to be adjusted via framework

This alternative would expand of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level.

This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap), only if the modification would not result in an entity having to divest. Including this measure would provide flexibility to managers to make changes to the caps in a timely manner. The impacts of any future framework action related to the excessive cap level would be analyzed through a separate action, which would include public comment opportunities and documentation of compliance with all applicable laws.

5.4 Multi-Year Management Measures Alternatives

Surfclam and ocean quahog regulations allow multi-year annual quota specification to be set for up to 3 years at a time (CFR §648.71 and 648.72). Therefore, current regulations allow, but do not obligate the Council to specify commercial quotas and other management measure for up to 3 years. Multi-year regulations have been implemented for all fisheries managed by the MAFMC to relieve administrative demands on the Council and NMFS imposed by annual specification requirements. Longer term specifications provide greater regulatory consistency and predictability to the fishing sectors.

Specifications of annual quotas are prepared in the final year of the quota period, unless there is a need for an interim quota modification. It is also stipulated in the regulations that on an annual basis, the MAFMC staff produce and provide to the Council an Atlantic surfclam and ocean quahog annual quota recommendation paper based on the ABC recommendation of the Scientific and Statistical Committee (SSC), the latest available stock assessment report prepared by NMFS, data reported by harvesters and processors, and other relevant data. Based on that report, and at least once prior to August 15 of the year in which a multi-year annual quota specification expires, the MAFMC, following an opportunity for public comment, will recommend to the Regional Administrator annual quotas and other management measures.

5.4.1 Alternative 1: No Action/*Status Quo* (Multi-Year Measures)

Under this no action alternative for multi-year management measures (alternative 1), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years.

Regulations for the surfclam and ocean quahog specifications setting process at 50 CFR §648.72, stipulate that annual catch quotas can be established for up to a 3-year period. The specifications setting process is described in detail above.

5.4.2 Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule

Under alternative 2, specifications could be set for a period up to the maximum number of years consistent with the NRCC-approved stock assessment schedule.[30] This alternative would provide additional flexibility as specifications could be set until a new surfclam and/or ocean quahog stock assessment is produced. New specifications of annual quotas would be prepared in the final year of the quota period, unless there is a need for interim quota modifications. Council staff would coordinate with Northeast Fisheries Science Center (NEFSC) staff, during the first quarter of each year (during the multi-year specifications period) to assess whether there is any relevant information regarding these fisheries that need to be addressed or used to produce interim quota modifications. The results would be provided to the Council in a memorandum. In the year in which a multi-year annual quota specifications expire, Council staff would produce a fishery information document and specification recommendation memorandum (as is done for all the Council managed FMPs) to provide to the SSC and the Council.

Lastly, under the current regulations at §648.72, there is some terminology (or outdated regulatory language) that is no longer used when deriving catch and landings limits for these species (e.g., DAH or Domestic Annual Harvest; DAP or Domestic Annual Processing) that would be removed from the regulations under this alternative. In addition, the requirements for the contents of annual quota reports are not consistent with the current process for setting catch and landings limits based off the stock assessment (i.e., outdated terminology), therefore that language would be revised to reflect current practices for development of fishery information documents and recommendations memorandum.

[30] For example, under the current schedule, new survey information will be available every 4 years for surfclams and every 6 years for ocean quahogs, after which a stock assessment may be conducted.

None of the other existing catch and landings limits regulations, accountability measures, reporting requirements or ITQ system management procedures will change under alternative 2.

5.5 Alternatives Considered but Rejected from Further Analysis

Since the initiation of this amendment, the Council considered a range of different alternatives to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges corresponding to the purpose and need statements described in section 4.1. To address these need statements, the Council considered various approaches. Concepts or options that were discussed but rejected from further consideration, are described below for joint ventures (section 5.5.1) and other excessive shares cap levels (5.5.2 and 5.5.3).

5.5.1 Allow for Joint Ventures in these fisheries

The surfclam and ocean quahog harvest levels have been well below the quota levels established for those fisheries for many years (see Table 4 in section 6.0). This alternative could allow for additional product to be sold and competition increased. For example, the FMAT initially discussed the possibility of joint ventures with foreign partners in which clams harvested by the United States fishermen could be delivered to foreign processing vessels in the EEZ. This alternative was considered but rejected by the Council for further analysis as it was deemed impractical for these fisheries (e.g., perishable nature of the product; ITQ system that requires cages to be landed with tags, etc.). In addition, some industry representatives indicated that they would not like to sell their clams to international companies competing with their interests.

5.5.2 Set the cap at a specific level. But allow for opportunity for further consolidation upon review by NMFS

Conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure or specific cap level established at an appropriate level now could over time become inefficiently high or low. This alternative would allow any entity or firm to request NMFS to review information (e.g., excessive shares cap level, market conditions, other relevant information) to assess if further consolidation (beyond any Council implemented excessive cap share level) was warranted for that entity or firm. This alternative was considered but rejected for further consideration as it would require a large amount of data to be provided by the industry; including confidential data on production costs, profitability, production capacity, etc. This information is not presently available to NMFS. In addition, this alternative would also require extensive review and analysis by the NEFSC Social Science Branch, making this approach impractical from the Council's perspective.

5.5.3 Use the seven steps on excessive shares proposal developed presented in the Compass Lexecon Report

The seven steps on the excessive shares proposal presented in the Compass Lexecon Report includes the use of the HHI, assessment of the breadth of the market, the scope and quantity of

substitute products, the level of excess capacity, the degree of product heterogeneity, the relative bargaining power of buyers and sellers, the ability to price discriminate, ease of entry, and efficiencies -or economies of scale, the size of the fringe, and the sources of supply to processors (Mitchell et al. 2011, Walden 2011). However, the FMAT indicated that this methodology requires a large amount of quantitative information that is not currently available and would also require frequent revision of caps due to changes in market dynamics. Therefore, the Council determined that this approach is impractical.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The affected environment consists of those physical, biological, and human components of the environment expected to experience impacts if any of the actions considered in this document were to be implemented. This document focuses on four aspects of the affected environment, which are defined as valued ecosystem components (VECs).

The VECs include:

- Managed species (i.e., Atlantic surfclam and ocean quahog) and non-target species
- Physical habitat
- Protected species
- Human communities

The following sections describe the recent condition of the VECs.

6.1 Managed Resources and Non-Target Species

6.1.1 Description of the Fisheries

The management unit is all Atlantic surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) in the Atlantic EEZ. The commercial fisheries for surfclam and ocean quahog are fully described in the document titled "Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council" (Northern Economics, Inc. 2019). Clam dredges (a bottom tending mobile gear) are utilized in the commercial fisheries for both species. An overview of commercial landings for both species is provided in Table 4 (in section 6.1.1.1.2 below).

Additional information on these fisheries can be found in Council meeting materials available at: http://www.mafmc.org.

6.1.1.1 Basic Biology

6.1.1.1.1 Atlantic Surfclam

Information on Atlantic surfclam biology can be found in the document titled, "Essential Fish Habitat Source Document: Surfclam, *Spisula solidissima*, Life History and Habitat Requirements" (Cargnelli et al. 1999a). An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh. Additional information on this species is available at the following website: http://www.fishwatch.gov. A summary of the basic biology is provided below.

Atlantic surfclams are distributed along the western North Atlantic Ocean from the southern Gulf of St. Lawrence to Cape Hatteras. Surfclams occur in both the state territorial waters (≤ 3 miles from shore) and within the EEZ (3-200 miles from shore). Commercial concentrations are found primarily off New Jersey, the Delmarva Peninsula, and on Georges Bank. In the Mid-Atlantic

region, surfclams are found from the intertidal zone to a depth of about 60 meters (197 ft), but densities are low at depths greater than 40 meters (131 ft).
The maximum size of surfclams is about 22.5 cm (8.9 inches) shell length, but surfclams larger than 20 cm (7.9 inches) are rare. The maximum age exceeds 30 years and surfclams of 15-20 years of age are common in many areas. Surfclams are capable of reproduction in their first year of life, although full maturity may not be reached until the second year. Eggs and sperm are shed directly into the water column. Recruitment to the bottom occurs after a planktonic larval period of about three weeks.

Atlantic surfclams are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of surfclams include certain species of crabs, sea stars, snails, and other crustaceans, as well as fish predators such cod and haddock.

6.1.1.1.2 Ocean Quahog

Information on ocean quahog biology can be found in the document titled, "Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Requirements" (Cargnelli et al. 1999b). An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh. Additional information on this species is available at the following website: http://www.fishwatch.gov. A summary of the basic biology is provided below.

The ocean quahog is a bivalve mollusk distributed in temperate and boreal waters on both sides of the North Atlantic Ocean. In the Northeast Atlantic, quahogs occur from Newfoundland to Cape Hatteras from depths of about 8 to 400 meters. Ocean quahogs further north occur closer to shore. The U.S. stock resource is almost entirely within the EEZ (3-200 miles from shore), outside of state waters, and at depths between 20 and 80 meters. However, in the northern range, ocean quahogs inhabit waters closer to shore, such that the state of Maine has a small commercial fishery which includes beds within the state's territorial sea (< 3 miles). Ocean quahogs burrow in a variety of substrates and are often associated with fine sand.

Ocean quahogs are one of the longest-living, slowest growing marine bivalves in the world. Under normal circumstances, they live to more than 100 years old. Ocean quahogs of the coast of the US have been aged well in excess of 200 years. Growth tends to slow after age 20, which corresponds to the size currently harvested by the industry (approximately 3 inches). Size and age at sexual maturity are variable and poorly known. Studies in Icelandic waters indicate that 10, 50, and 90 percent of female ocean quahogs were sexually mature at 40, 64 and 88 mm (1.5, 2.5 and 3.5 inches) shell length or approximately 2, 19 and 61 years of age. Spawning occurs over a protracted interval from summer through autumn. Free-floating larvae may drift far from their spawning location because they develop slowly and are planktonic for more than 30 days before settling. Major recruitment events appear to be separated by periods of decades.

Based on their growth, longevity and recruitment patterns, ocean quahogs are relatively unproductive and able to support only low levels of fishing. The current resource consists of individuals that accumulated over many decades.

Ocean quahogs are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of ocean quahogs include certain species of crabs, sea stars, and other crustaceans, as well as fish species such as sculpins, ocean pout, cod, and haddock.

Table 4. Federal Surfclam and Ocean Quahog Quotas and Landings: 1998 - 2020.

	Surfclam ('000 bu)			Ocean Quahog ('000 bu)		
Year	**Landings[a]**	**Quota**	**% Harvested**	**Landings[b]**	**Quota**	**% Harvested**
1998	2,365	2,565	92%	3,946	4,000	99%
1999	2,539	2,565	99%	3,832	4,500	85%
2000	2,566	2,565	100%	3,246	4,500	72%
2001	2,855	2,850	100%	3,763	4,500	84%
2002	3,113	3,135	99%	3,957	4,500	88%
2003	3,241	3,250	100%	4,148	4,500	92%
2004	3,138	3,400	92%	3,892	5,000	78%
2005	2,744	3,400	81%	3,006	5,333	56%
2006	3,057	3,400	90%	3,147	5,333	59%
2007	3,231	3,400	95%	3,431	5,333	64%
2008	2,919	3,400	86%	3,467	5,333	65%
2009	2,602	3,400	77%	3,463	5,333	65%
2010	2,332	3,400	69%	3,591	5,333	67%
2011	2,443	3,400	72%	3,160	5,333	59%
2012	2,341	3,400	69%	3,497	5,333	66%
2013	2,406	3,400	71%	3,245	5,333	61%
2014	2,364	3,400	70%	3,196	5,333	60%
2015	2,354	3,400	69%	3,007	5,333	56%
2016	2,339	3,400	69%	3,075	5,333	57%
2017	2,192[c]	3,400	64%[c]	3,172[c]	5,333	59%[c]
2018	NA	3,400	NA	NA	5,333	NA
2019	NA	3,400	NA	NA	5,333	NA
2020	NA	3,400	NA	NA	5,333	NA

[a] 1 surfclam bushel is approximately 17 lb. [b] 1 ocean quahog bushel is approximately 10 lb. [c] Preliminary, incomplete 2017 data. NA = Not yet available. Source: NMFS Clam Vessel Logbook Reports.

6.1.2 Description of the Stock (Including Status, Stock Characteristics, and Ecological Relationships)

Reports on stock status, including SAW/SARC (Stock Assessment Workshop/Stock Assessment Review Committee) reports, and assessment update reports are available online at the NOAA NEFSC website: http://www.nefsc.noaa.gov/. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

6.1.2.1 Atlantic Surfclam

The Atlantic surfclam stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 61 (SAW 61; NEFSC 2017a). A statistical catch at age and length model called Stock Synthesis was used. Reports on "Stock Status," including assessment and reference point updates, SAW reports, and SARC panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

New reference points were developed for SAW 61 which are more justified scientifically. The new biomass reference points and measures of stock biomass are ratios rather than absolute biomass in weight. This approach allows for conclusions about the status of the surfclam stock despite substantial uncertainty in the actual biomass of the stock (NEFSC 2017a).

The Atlantic surfclam stock was not overfished in 2015 (Figure 1; NEFSC 2017a). Based on recommended reference points for the whole stock which use spawning stock biomass (SSB), estimated $SSB_{2015}/SSB_{Threshold} = 2.54$ (probability overfished < 0.01). For surfclam, SSB is almost equal to total biomass. Trends expressed as the ratio $SSB/SSB_{Threshold}$ are more reliably estimated than SSB. For the whole stock, relative SSB ($SSB/SSB_{Threshold}$) declined during the last fifteen years but is still above the target.

Overfishing did not occur in 2015 (Figure 2; NEFSC 2017a). Based on new recommended reference points, estimated $F_{2015}/F_{Threshold} = 0.295$ (probability overfishing < 0.01). Trends expressed as the ratio $F/F_{Threshold}$ are more reliably estimated than absolute fishing mortality rates. For the whole stock the trend in relative F ($F/F_{Threshold}$) generally increased during the last fifteen years (despite recent declines in the south) but is still below the threshold.

Trends expressed as the ratio of recruitment (R) and mean recruitment in an unfished stock (R_0) are more reliably estimated than absolute recruitment (Figure 3; NEFSC 2016). The trend in relative recruitment is measured using the ratio R/R_0. Recruitment generally increased over the last decade, and in 2015 R/R_0 was 0.57 in the north, 0.97 in the south, and 0.75 for the stock as a whole, indicating recruitment in 2015 was about 57%, 97% and 75% of the maximum long-term average in the three regions. These recruitment patterns are probably normal in a surfclam stock at relatively high biomass and with low fishing mortality. Recruitment for the whole stock is measured as the geometric mean of R/R_0 in the northern and southern areas and is more uncertain than estimates for either area.

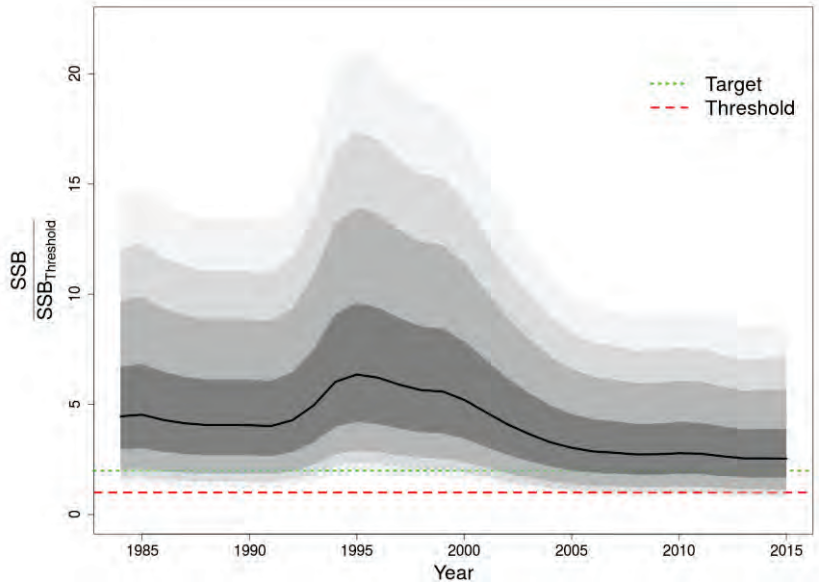


Figure 1. Trends in relative spawning stock biomass (SSB/SSB$_{Threshold}$) for the whole Atlantic surfclam stock during 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The green short-dash line at SSB/SSB$_{Threshold}$ = 2 is the management target. The red long-dash line at SSB/SSB$_{Threshold}$ = 1 is the level that defines an overfished stock* (NEFSC 2017a).

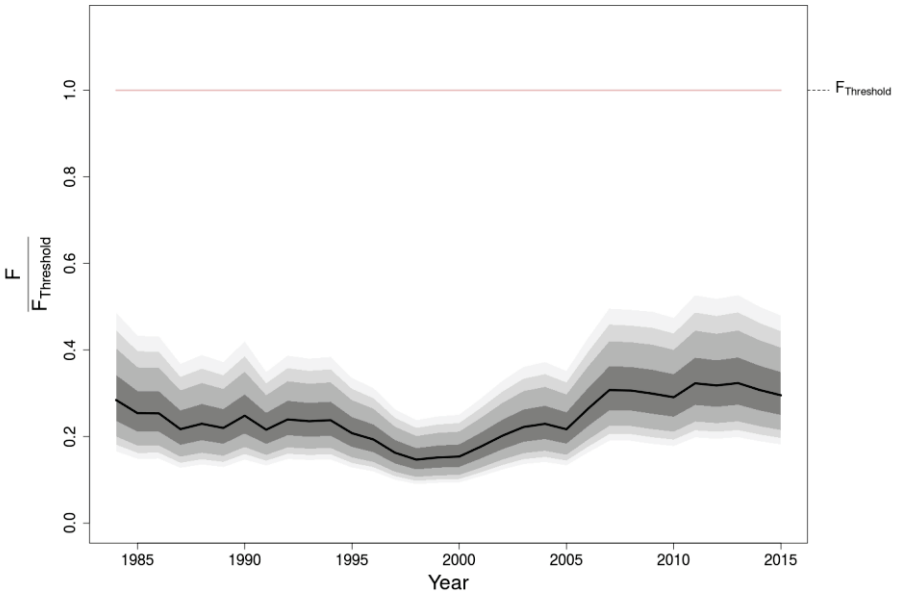


Figure 2. Trends in relative fishing mortality F/F$_{Threshold}$ for the whole Atlantic surfclam stock 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The solid line at F/F$_{Threshold}$ = 1 is the new fishing mortality threshold reference point* (NEFSC 2017a).

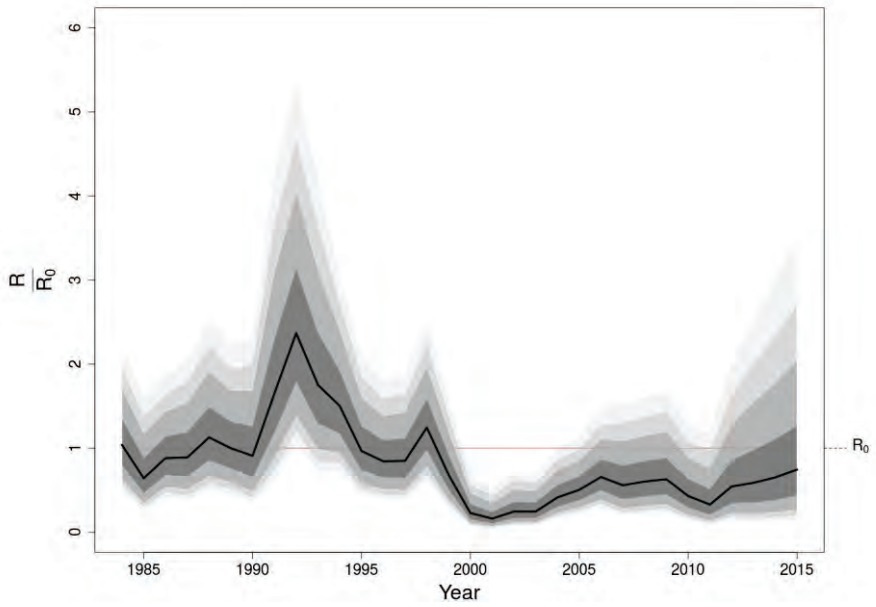


Figure 3. Trends in relative recruitment (R/R_0 for age zero recruits) for the whole Atlantic surfclam stock during 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The horizontal line is mean recruitment in an unfished stock* (NEFSC 2017a).

6.1.2.2 Ocean Quahog

The ocean quahog stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 63 (SAW 63; NEFSC 2017b). A statistical catch at length model called Stock Synthesis was used. Reports on "Stock Status," including assessment and reference point updates, SAW reports, and SARC panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

The ocean quahog was not overfished in 2016 (Figure 4; NEFSC 2017b). Based on SAW 63 reference points from the 2017 assessment for the stock, estimated $SSB_{2016}/SSB_{Threshold} = 2.04$ (probability overfished < 0.01), where SSB is spawning stock biomass.

Overfishing did not occur in 2016 (Figure 5; NEFSC 2017b). Based on SAW 63 reference points, estimated $F_{2016/FThreshold} = 0.246$ (probability overfishing < 0.01), where F is fishing mortality rate.

There is little information about annual recruitment variability for ocean quahog. Model estimated recruitment has been stable and near unfished recruitment levels since 2000 (NEFSC 2017b).

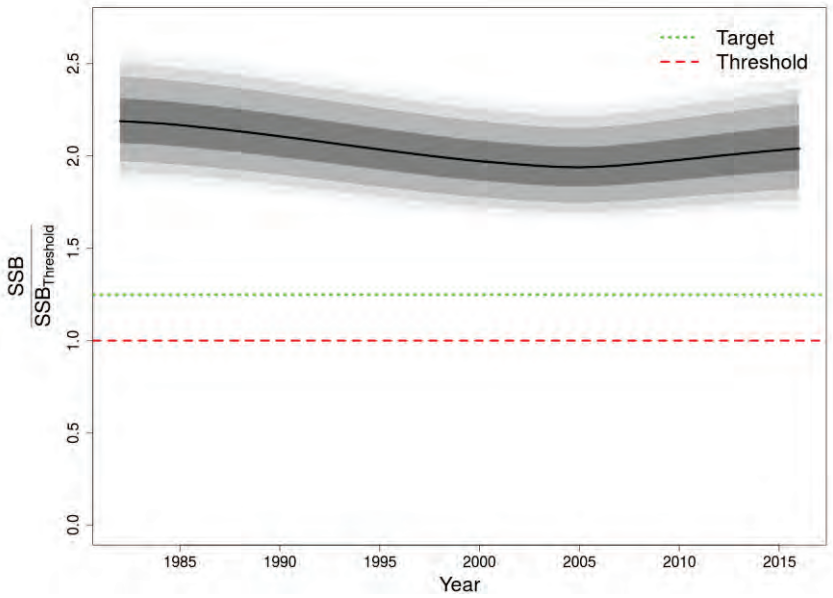


Figure 4. Trends in relative spawning stock biomass (SSB/SSB$_{Threshold}$) for the whole ocean quahog stock during 1982-2016. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The green short-dash line at SSB/SSB$_{Threshold}$ = 1.25 is the management target. The red long-dash line at SSB/SSB$_{Threshold}$ = 1 is the level that defines an overfished stock* (NEFSC 2017b).

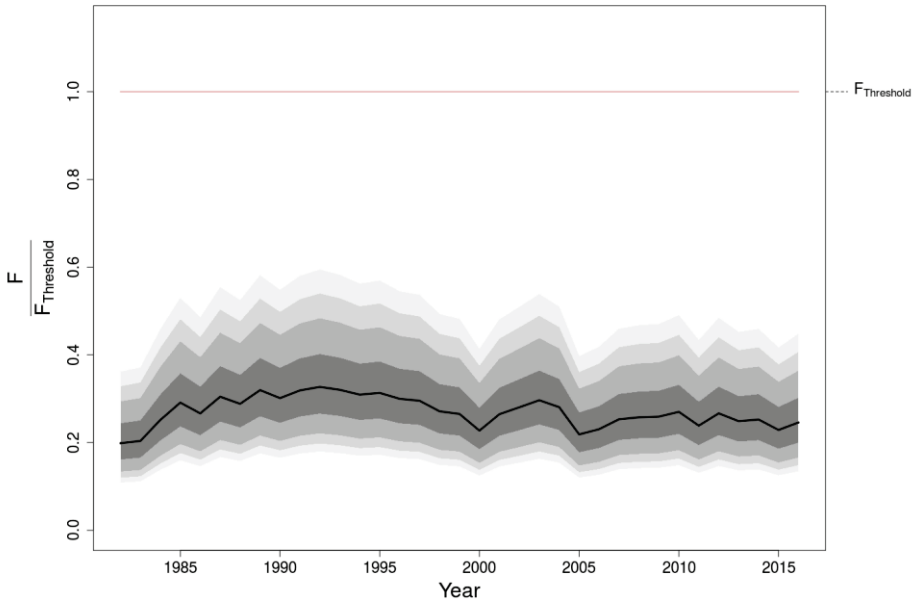


Figure 5. Trends in relative fishing mortality F/F$_{Threshold}$ for ocean quahog stock 1982-2016. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The solid line at F/F$_{Threshold}$ = 1 is the new fishing mortality threshold reference point* (NEFSC 2017b).

6.1.3 Non-Target Species

Non-target species are those species caught incidentally while targeting other species. Non-target species may be retained or discarded.

The estimated bycatch of non-targeted species by the surfclam and ocean quahog fisheries based on observer data from 2016 was provided by Toni Chute (Personal Communication, November 15, 2017).

There were 15 observed ocean quahog trips (out of a total of 957 trips, so 1.6% of trips were observed) and 28 observed surfclam trips (out of a total of 2,414, so 1.2% percent of trips were observed) in 2016. All species or species categories caught in the dredge, brought on board, and noted and weighed by observers during normal dredging operations are listed in Tables 5 and 6. For the 2016 observed hauls, the protocol for the observers was to stand along the conveyor belt after the catch had passed over the shaker table and move non-target species from the belt into baskets for weight. Bycatch types that were not informative (such as "invertebrate, unclassified") or inanimate (shell, debris) are not shown. The dominant bycatch species include sea scallops, skates, monkfish, stargazers, crabs, and snails. The surfclam fishery also discards ocean quahogs, and the ocean quahog fishery discards surfclams.

Table 7 shows estimates of total fisheries bycatch/discard in 2016 based on the observer data. The weight of each species caught during observed hauls (including the target species) was totaled, then the amount of each non-targeted species was divided by the amount of target species caught, converted to meat weights, to determine a discard/kept (d/k) ratio for that species. Non-targeted species that were kept in small amounts (usually scallops, monkfish, and flatfish) were treated as discard for the purpose of estimating total bycatch. The d/k ratio for each bycatch species was then multiplied by the total landings of the target species in 2016 in meat weights to estimate bycatch. For example, if the catch from observed surfclam trips totaled 100 tons of surfclam meats and 1 ton of scallops, the calculated d/k ratio for scallops based on observer data would be 0.01 or 1/100. If the surfclam fishery for that year landed 1,000 tons of surfclam meats, then 1,000 tons multiplied by the d/k ratio of 0.01 for scallops estimates that about 10 tons of scallops were caught and discarded by the surfclam fishery. Only the amount of bycatch was estimated - no assumptions were made about discard mortality or incidental mortality. Bycatch species that were estimated to be less than 100 pounds in total over the year are not shown.

It is important to note that specific bycatch types were highly variable. A few hauls where a significant weight of a certain bycatch species was caught influence the annual estimates. Using mean catch per trip of all the bycatch species overestimates total bycatch by assuming all the species are caught in every trip. Tables 8 and 9 list the amounts and types of bycatch reported from individual trips to show variability between trips.

Lastly, there were small quantities of ocean quahogs caught in observed surfclam trips and vice versa. In all, ocean quahogs contributed with 0.65% of the total catch on observed surfclam trips and surfclams contributed with 0.48% of the total catch on observed ocean quahog trips.

Table 5. Total weights of species caught during all observed ocean quahog hauls in 2016, and their percentage of both total catch and un-targeted catch.

Ocean quahog fishery			
Number of observed trips	15		
Number of observed hauls	370		
Species caught	**Weight (lbs)**	**% of total catch**	**% of un-targeted catch**
Ocean quahog (round weight)	2,629,292	98.53	
Surfclam (round weight)	12,827	0.48	32.77
Sea scallop	11,612	0.44	29.67
Little skate	6,816	0.26	17.42
Monkfish	3,121	0.12	7.98
Mussel, unclassified	829	0.03	2.12
Winter skate	741	0.03	1.89
Spiny dogfish	656	0.02	1.68
Snail, unclassified	617	0.02	1.58
Striped sea robin	228	0.01	0.58
Summer flounder	189	0.01	0.48
Horseshoe crab	176	0.01	0.45
Cancer crab, unclassified	171	0.01	0.44
Rock crab	167	0.01	0.43
Jonah crab	163	0.01	0.42
Worm, unclassified	161	0.01	0.41
Skate, unclassified	131	0.005	0.34
Crab, unclassified	110	0.004	0.28
Whelk, true, unclassified	79	0.003	0.20
Northern stargazer	45	0.002	0.11
Sponge, unclassified	36	0.001	0.09
Barndoor skate	35	0.001	0.09
Clearnose skate	30	0.001	0.08
Northern sea robin	30	0.001	0.08
Sea star, unclassified	28	0.001	0.07
Smooth dogfish	22	0.001	0.06
American lobster	20	0.001	0.05
Black sea bass	20	0.001	0.05
Skate, little or winter	19	0.001	0.05
Fourspot flounder	12	0.0005	0.03
Windowpane flounder	8	0.0003	0.02
Moon snail	6	0.0002	0.02
Ocean pout	6	0.0002	0.01
Red hake	5	0.0002	0.01
American plaice	4	0.0001	0.01
Bluefish	3	0.0001	0.01
Whelk, unclassified	3	0.0001	0.01
Spotted hake	2	0.0001	0.01
Hermit crab, unclassified	2	0.0001	0.01
Silver hake	2	0.0001	0.004
Yellowtail flounder	1	0.00004	0.003
Winter flounder	1	0.00003	0.002
Scup	1	0.00003	0.002
Chain dogfish	1	0.00003	0.002
Sea raven	1	0.00002	0.001
Stony coral, unclassified	0.4	0.00001	0.001
Eel, unclassified	0.1	0.000004	0.0003
Sea cucumber, unclassified	0.1	0.000004	0.0003

Table 6. Total weights of species caught during all observed surfclam hauls in 2016, and their percentage of both total catch and un-targeted catch.

Surfclam fishery			
Number of observed trips	28		
Number of observed hauls	815		
Species caught	**Weight (lbs)**	**% of total catch**	**% of un-targeted catch**
Surfclam (round weight)	1,845,643	97.50	
Moon snail, unclassified	12,527	0.66	26.51
Ocean quahog (round weight)	12,267	0.65	25.96
Mussel, unclassified	12,007	0.63	25.41
Winter skate	2,737	0.14	5.79
Little skate	2,393	0.13	5.06
Horseshoe crab	1,307	0.07	2.77
Northern stargazer	1,131	0.06	2.39
Rock crab	651	0.03	1.38
Hermit crab, unclassified	618	0.03	1.31
Northern sea robin	351	0.02	0.74
Monkfish	323	0.02	0.68
Sea scallop	294	0.02	0.62
Spiny dogfish	168	0.01	0.36
Snail, unclassified	142	0.01	0.30
Elasmobranch eggs, unclassified	71	0.004	0.15
Summer flounder	60	0.003	0.13
Winter flounder	32	0.002	0.07
Jonah crab	27	0.001	0.06
Striped sea robin	27	0.001	0.06
American lobster	25	0.001	0.05
Channeled whelk	21	0.001	0.04
Windowpane flounder	12	0.001	0.03
Haddock	12	0.001	0.02
Longhorn sculpin	11	0.001	0.02
Sea raven	8	0.0004	0.02
Skate, little or winter	8	0.0004	0.02
Whelk, true, unclassified	5	0.0003	0.01
Ocean pout	4	0.0002	0.01
Lady crab	3	0.0002	0.01
Sea urchin, unclassified	2	0.0001	0.004
Worm, unclassified	2	0.0001	0.004
Anemone, unclassified	1	0.0001	0.003
Sea star, unclassified	1	0.0001	0.003
Stony coral, unclassified	1	0.00004	0.001
Sponge, unclassified	1	0.00003	0.001
Witch flounder	0.4	0.00002	0.001
Sand dollar	0.4	0.00002	0.001

Table 7. Estimated total fishery bycatch in pounds for 2016 by species.

	Ocean quahog fishery	Surfclam fishery
2016 landings (lbs meats)	21,036,293	39,428,066
Estimated total bycatch by species		
American lobster	1,340	2,844
American plaice	251	
Anemone, unclassified		146
Barndoor skate	2,291	
Black sea bass	1,333	
Bluefish	198	
Cancer crab, unclassified	18,550	
Channeled whelk		2,351
Clearnose skate	2,007	
Elasmobranch eggs, unclassified		7,994
Fourspot flounder	799	
Haddock		1,288
Hermit crab, unclassified	132	69,239
Horseshoe crab	11,638	146,371
Jonah crab	10,760	3,034
Lady crab		336
Little skate	449,930	267,919
Longhorn sculpin		1,209
Monkfish	206,046	36,176
Moon snail	422	1,402,531
Mussel, unclassified	54,751	1,344,344
Northern sea robin	1,947	39,344
Northern stargazer	2,971	126,576
Ocean pout	370	448
Ocean quahog (round weight)		1,373,410
Red hake	323	
Rock crab	11,011	72,911
Sea raven	33	896
Sea scallop	766,527	32,929
Sea star, unclassified	1,875	134
Sea urchin		235
Silver hake	106	
Skate unclassified	9,902	896
Smooth dogfish	1,459	
Snail, unclassified	40,743	15,899
Spiny dogfish	43,324	18,821
Sponge, unclassified	2,390	67
Spotted hake	158	
Striped sea robin	15,071	2,978
Summer flounder	12,457	6,673
Surfclam (round weight)	846,732	
Whelk unclassified	5,360	537
Windowpane flounder	508	1,366
Winter flounder	59	3,594
Winter skate	48,882	306,446
Worm, unclassified	10,621	190

Table 8. Observed bycatch by trip, in pounds, surfclam observed trips.

Trip	surfclams (round weight)	all OQ	all snails	all scallops	all teleosts	all elasmobranchs	all other inverts
1	112,615		73		16	193	1
2	69,173				498	164	587
3	108,103		2,973		6	2	13
4	41,987		479	35	5	16	226
5	70,072	614	81	85	94	349	34
6	72,063	5			2	39	60
7	85,307		1,687		9	286	11,945
8	112,862		1,699		363	1,226	7
9	43,973				169	3	29
10	33,276			2	239	6	216
11	8,236	7	5	113	8	1	4
12	21,839				12		14
13	20,323	819	47				3
14	53,223		115		24	69	111
15	36,368				29	22	10
16	38,925	1,213	14	2	34	9	99
17	134,701				9	211	1
18	40,048		1		134	85	97
19	15,781	1,785		31	8		6
20	43,503	2,195	9		5	98	147
21	53,223	4		26	99	68	44
22	141,126		1,634		24	51	27
23	169,700		790			15	
24	55,900		124		6	716	30
25	27,363				3	183	12
26	21,091		21			29	4
27	94,932				4	486	
28	119,930		1,953		2	74	4

Table 9. Observed bycatch by trip, in pounds, ocean quahog observed trips.

trip	ocean quahogs (round weight)	all SC	all snails	all scallops	all teleosts	all elasmos	all other inverts
1	158,148		4	2,081	147	425	25
2	338,278			509	180	456	
3	53,535			1,367	44	82	53
4	272,884			2,169	1,536	1,901	3
5	110,072			116	67	291	310
6	123,579			60	213	169	108
7	182,071	9,392		1,220	136	386	159
8	149,225			182	40	172	15
9	197,666			372	111	439	133
10	214,583			698	248	259	4
11	117,521		79	819	178	857	349
12	102,755		5	188	91	234	18
13	225,707			1,285	199	1,329	661
14	119,578			285	168	26	5
15	263,690	3,434		260	320	1,426	22

The most recent benchmark stock assessment for sea scallop was completed in July 2014 (NEFSC 2014). This assessment indicated that the sea scallop stock was not overfished, and overfishing was not occurring.

For the other non-target species, according to the 2016 NE Skate Stock Status Update, little skate and winter skate are not overfished and are not subject to overfishing (NEFSC 2017c). [31] Moon snails have not been assessed; therefore, their overfished and overfishing status is unknown.

6.2 Physical Environment and Essential Fish Habitat (EFH)

The physical, chemical, biological, and geological components of benthic and pelagic environments are important aspects of habitat for marine species and have implications for reproduction, growth, and survival of marine species. The following sections briefly describe key aspects of physical habitats which may be impacted by the alternatives considered in this document. This information is largely drawn from Stevenson et al. (2004), unless otherwise noted.

6.2.1 Physical Environment

Surfclams and ocean quahogs inhabit the northeast U.S. shelf ecosystem, which includes the area from the Gulf of Maine south to Cape Hatteras, extending seaward from the coast to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The northeast shelf ecosystem includes the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types.

Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents.

The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina.

The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom. The continental shelf in this region was shaped largely by sea level fluctuations caused by past ice ages. The shelf's basic morphology and sediments derive from the retreat of the last ice sheet and the subsequent rise in sea level. Currents and waves have since modified this basic structure.

[31] 2016 NE Skate Stock Status Update available at: https://s3.amazonaws.com/nefmc.org/4_NEFSC_SkateMemo_July_2017_170922_085135.pdf

Shelf and slope waters of the Mid-Atlantic Bight have a slow southwestward flow that is occasionally interrupted by warm core rings or meanders from the Gulf Stream. On average, shelf water moves parallel to bathymetry isobars at speeds of 5 - 10 cm/s at the surface and 2 cm/s or less at the bottom. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate of 20 cm/s that increases to 100 cm/s near inlets.

The shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope (100 - 200 m water depth) at the shelf break. Numerous canyons incise the slope, and some cut up onto the shelf itself. The primary morphological features of the shelf include shelf valleys and channels, shoal massifs, scarps, and sand ridges and swales. Most of these structures are relic except for some sand ridges and smaller sand-formed features. Shelf valleys and slope canyons were formed by rivers of glacier outwash that deposited sediments on the outer shelf edge as they entered the ocean. Most valleys cut about 10 m into the shelf; however, the Hudson Shelf Valley is about 35 m deep. The valleys were partially filled as the glacier melted and retreated across the shelf. The glacier also left behind a lengthy scarp near the shelf break from Chesapeake Bay north to the eastern end of Long Island. Shoal retreat massifs were produced by extensive deposition at a cape or estuary mouth. Massifs were also formed as estuaries retreated across the shelf.

Some sand ridges are more modern in origin than the shelf's glaciated morphology. Their formation is not well understood; however, they appear to develop from the sediments that erode from the shore face. They maintain their shape, so it is assumed that they are in equilibrium with modern current and storm regimes. They are usually grouped, with heights of about 10 m, lengths of 10 - 50 km and spacing of 2 km. Ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. The seaward face usually has the steepest slope. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Swales occur between sand ridges. Since ridges are higher than the adjacent swales, they are exposed to more energy from water currents and experience more sediment mobility than swales. Ridges tend to contain less fine sand, silt and clay while relatively sheltered swales contain more of the finer particles. Swales have greater benthic macrofaunal density, species richness and biomass, due in part to the increased abundance of detrital food and the less physically rigorous conditions.

Sand waves are usually found in patches of 5 - 10 with heights of about 2 m, lengths of 50 - 100 m and 1 - 2 km between patches. Sand waves are primarily found on the inner shelf, and often observed on sides of sand ridges. They may remain intact over several seasons. Megaripples occur on sand waves or separately on the inner or central shelf. During the winter storm season, they may cover as much as 15% of the inner shelf. They tend to form in large patches and usually have lengths of 3 - 5 m with heights of 0.5 - 1 m. Megaripples tend to survive for less than a season. They can form during a storm and reshape the upper 50 - 100 cm of the sediments within a few hours. Ripples are also found everywhere on the shelf and appear or disappear within hours or days, depending upon storms and currents. Ripples usually have lengths of about 1 - 150 cm and heights of a few centimeters.

Sediments are uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0 - 10 m covers most of the shelf. The mean bottom flow from the constant southwesterly current is not fast enough to move sand, so sediment transport must be episodic. Net sediment movement is in the same southwesterly direction as the current. The

sands are mostly medium to coarse grains, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf but is common in the Hudson Shelf Valley.

Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the "mud line," and sediments are 70 - 100% fine on the slope. On the slope, silty sand, silt, and clay predominate (Stevenson et al. 2004).

Greene et al. (2010) identified and described Ecological Marine Units (EMUs) in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative depth), and benthic organisms. According to this classification scheme, the sediment composition off New England and the Mid-Atlantic is about 68% sand, 26% gravel, and 6% silt/mud. The seafloor is classified as about 52% flat, 26% depression, 19% slope, and 3% steep (Table 10).

Artificial reefs are another significant Mid-Atlantic habitat. These localized areas of hard structure were formed by shipwrecks, lost cargoes, disposed solid materials, shoreline jetties and groins, submerged pipelines, cables, and other materials (Steimle and Zetlin 2000). While some of these materials were deposited specifically for use as fish habitat, most have an alternative primary purpose; however, they have all become an integral part of the coastal and shelf ecosystem. In general, reefs are important for attachment sites, shelter, and food for many species, and fish predators such as tunas may be attracted by prey aggregations or may be behaviorally attracted to the reef structure.

Like all the world's oceans, the western North Atlantic is experiencing changes to the physical environment as a result of global climate change. These changes include warming temperatures; sea level rise; ocean acidification; changes in stream flow, ocean circulation, and sediment deposition; and increased frequency, intensity, and duration of extreme climate events. These changes in physical habitat can impact the metabolic rate and other biological processes of marine species. As such, these changes have implications for the distribution and productivity of many marine species. Several studies demonstrate that the distribution and productivity of several species in the Mid-Atlantic have changed over time, likely because of changes in physical habitat conditions such as temperature (e.g., Weinberg 2005, Lucey and Nye 2010, Nye et al. 2011, Pinsky et al. 2013, Gaichas et al. 2015).

Table 10. Composition of EMUs off New England and the Mid-Atlantic (Greene et al. 2010). EMUs which account for less than 1% of the surface area of these regions are not shown.

Ecological Marine Unit	Percent Coverage
High Flat Sand	13%
Moderate Flat Sand	10%
High Flat Gravel	8%
Side Slope Sand	6%
Somewhat Deep Flat Sand	5%
Low Slope Sand	5%
Moderate Depression Sand	4%
Very Shallow Flat Sand	4%
Side Slope Silt/Mud	4%
Moderate Flat Gravel	4%

Deeper Depression Sand	4%
Shallow Depression Sand	3%
Very Shallow Depression Sand	3%
Deeper Depression Gravel	3%
Shallow Flat Sand	3%
Steep Sand	3%
Side Slope Gravel	3%
High Flat Silt/Mud	2%
Shallow Depression Gravel	2%
Low Slope Gravel	2%
Moderate Depression Gravel	2%
Somewhat Deep Depression Sand	2%
Deeper Flat Sand	1%
Shallow Flat Gravel	1%
Deep Depression Gravel	1%
Deepest Depression Sand	1%
Very Shallow Depression Gravel	1%

6.2.2 Essential Fish Habitat (EFH)

Information on surfclam and ocean quahog habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Atlantic Surfclam, *Spisula solidissima*, Life History and Habitat Characteristics." (Cargnelli et al. 1999a) and "Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Characteristics" (Cargnelli et al. 1999b). Electronic versions of these source documents are available at this website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current designations of EFH by life history stage for surfclam and ocean quahog are provided here:

Atlantic surfclam juveniles and adults: EFH habitat is defined as throughout the substrate, to a depth of three feet below the water/sediment interface, within federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90 percent of all the ranked ten-minute squares for the area where surfclams were caught in the NEFSC surfclam and ocean quahog dredge surveys. Surfclams generally occur from the beach zone to a [water] depth of about 200 feet, but beyond about 125 feet abundance is low.

Ocean quahog juveniles and adults: EFH habitat is defined as throughout the substrate, to a depth of three feet below the water/sediment interface, within federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90 percent of all the ranked ten-minute squares for the area where ocean quahogs were caught in the NEFSC surfclam and ocean quahog dredge surveys. Distribution in the western Atlantic ranges in [water] depths from 30 feet to about 800 feet. Ocean quahogs are rarely found where bottom water temperatures exceed 60 ^{o}F, and occur progressively further offshore between Cape Cod and Cape Hatteras.

There are other federally-managed species with life stages that occupy essential benthic habitats that may be susceptible to adverse impacts from hydraulic clam dredges; descriptions of these are given in Table 1 of Appendix C (from Stevenson et al. 2004) and are available at: http://www.greateratlantic.fisheries.noaa.gov/hcd/list.htm.

6.2.3 Fishery Impact Considerations

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2003). Atlantic surfclam and ocean quahog are primarily landed by hydraulic clam dredges. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the MSA). As stated in section 2.2 of Amendment 13, the prime habitat of surfclam and ocean quahog consists of sandy substrates with no vegetation or benthic 'structures' that could be damaged by the passing of a hydraulic dredge. In these 'high energy' environments, it is thought that the recovery time following passage of a clam dredge is relatively short. Because of the potential that the fisheries adversely impact EFH for a number of managed species, eight action alternatives (including closed area alternatives) for minimizing those impacts were considered by the Council in Amendment 13.

A panel of experts who participated in a 2001 workshop to evaluate the potential habitat impacts of fishing gears used in the Northeast region concluded that there are potentially large, localized impacts of hydraulic clam dredges on the biological and physical structure of sandy benthic habitats (NEFSC 2002). The Council concluded in Amendment 13 that there may be some adverse effects of clam dredging on EFH, but concurred with the workshop panel that the effects are short term and minimal because the fisheries occurs in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats. The panel concluded that biological communities would recover within months to years (depending on what species was affected) and physical structure within days in high energy environments to months in low energy environments. The preamble to the EFH Final Rule (January 17, 2002; 67 FR (Federal Register) 2343) defines temporary impacts as those that are limited in duration and that allow the particular environment to recover without measurable impact.

Additionally, at the time that workshop was held, the overall area impacted by the clam fisheries was relatively small (approximately 100 square nautical miles), compared to the large area of high energy sand on the continental shelf. The closed area alternatives that were considered in Amendment 13 were analyzed for their biological, economic, and social impacts, but given the results of the gear effects analysis in that document (summarized above), the Council concluded that none of them were necessary or practicable. Since 2003, when Amendment 13 was implemented, the area open to surfclam and ocean quahog harvesting has expanded to include a large area on Georges Bank that had previously been closed since 1990 due to the presence of the toxin that causes PSP in the tissues of surfclam and ocean quahog (NMFS 2012 and 2013). As such, a portion of the fishing effort now operates on Georges Bank and the gear is now being used on more complex, hard-bottom habitats (e.g., Nantucket Sholas) than was the case in 2003. The habitat impact analysis conducted by the NMFS concluded that the adverse impacts of renewed clam dredging on Georges Shoal would be minimal and/or temporary as long as dredging was confined to the shallower, more dynamic sandy bottom habitats which were the only areas where it was believed that the gear could be operated.

A portion of the following discussion is excerpted from the NEFMC's Omnibus EFH Amendment 2 (OHA2) which implemented measures designed to minimize to the extent practicable the adverse effects of fishing on essential fish habitat.[32] The OHA2 employed a spatial explicit model (SASI = Swept Area Seabed Impact) to estimate habitat vulnerability

[32] Available at: https://www.nefmc.org/library/omnibus-habitat-amendment-2

incorporating gear-specific susceptibility (S) and recovery (R) scores for a number of geological and biological habitat features in various subtracts.

Hydraulic clam dredges have been used in the surfclam fishery for over five decades and in the ocean quahog fishery since its inception in the early 1970s. These dredges are highly sophisticated and are designed to: 1) be extremely efficient (80 to 95% capture rate); 2) produce a very low bycatch of other species; and 3) retain very few undersized clams (NEFSC 2002).

The typical dredge is 12 feet wide and about 22 feet long and uses pressurized water jets to wash clams out of the seafloor. Towing speed at the start of the tow is 2.5 knots and declines as the dredge accumulates clams. The dredge is retrieved once the vessel speed drops below 1.5 knots, which can be only a few minutes in very dense beds. However, a typical tow lasts about 15 minutes. The water jets penetrate the sediment in front of the dredge to a depth of about 8 – 10 inches, depending on the type of sediment and the water pressure. The water pressure that is required to fluidize the sediment varies from 50 pounds per square inch (psi) in coarse sand to 110 psi in finer sediments. The objective is to use as little water as possible since too much pressure will blow sediment into the clams and reduce product quality. The "knife" (or "cutting bar") on the leading bottom edge of the dredge opening is 5.5 inches deep for surfclams and 3.5 inches for ocean quahogs. The knife "picks up" clams that have been separated from the sediment and guides them into the body of the dredge ("the cage"). If the knife size is not appropriate, clams can be cut and broken, resulting in significant mortality of clams left on the bottom. The downward pressure created by the runners on the dredge is about 1 psi (NEFSC 2002).

Hydraulic clam dredges can be operated in areas of large-grain sand, fine sand, sand with small-grain gravel, sand with small amounts of mud, and sand with very small amounts of clay. Most tows are made in large-grain sand. Surfclam/ocean quahog dredges are not fished in clay, mud, pebbles, rocks, coral, large gravel >0.5 in (> 1.25 cm), or seagrass beds. For the most part, hydraulic clam dredging is restricted to sandy and muddy sand substrates because the gear can be damaged in hard bottom areas.

In the SASI model, susceptibility and recovery were only evaluated for hydraulic clam dredges for sand and granule-pebble substrates because this gear cannot be operated in mud or in rocky habitats (NEFSC 2002, Wallace and Hoff 2005). In the absence of much published information on the degree to which benthic habitat features are susceptible to this gear, professional judgment relied on the presumption that these dredges have a more severe immediate impact on surface and sub-surface habitat features than other fishing gears used in the Northeast region.

Hydraulic dredges have higher vulnerability scores than otter trawls and scallop dredges, and much higher vulnerability scores than the fixed gears. Across all gears, geological and biological features are generally most susceptible to impacts from hydraulic dredges as compared to other gear types (average scores for all features in a particular substrate and energy environment ranged from 2.5-2.8 out of 3). Average otter trawl and scallop dredge S scores (susceptibility score) ranged from 1.0 to 2.0. Higher S scores reflect a higher proportion of features with >25% encountered estimated to have a reduction in functional habitat value. For trawls and scallop dredges, there was a larger proportion of high S scores (S=2 or 3) for geological features, especially in mud and cobble, than for biological features; for hydraulic dredges, however, there was very little difference between feature classes.

Geological feature recovery values are slightly higher (i.e., recovery times are longer) for hydraulic dredges than for the other two mobile gears (i.e., otter trawl and scallop dredges) fished in similar habitats (sand and granule-pebble). Average recovery values are more similar for biological features across the three mobile gear types, although in a few cases estimated recovery times are longer for hydraulic dredge gear. This was due to differences in gear effects associated with hydraulic dredges as compared to scallop dredges or otter trawls.

Based on the results of the SASI model, the OHA2 implemented mobile bottom-tending gear throughout various habitat management areas (HMAs) selected by the NEFMC (Figures 6 and 7). In addition, the OHA2 included an exemption for hydraulic clam dredges in many of the HMAs and included a provision for clam dredge exemption for Georges Bank-Nantucket Shoals for a year after implementation of OHA2 to allow time for the NEFMC to consider creating access areas within two of the areas included in the alternatives. The approved HMAs include: (a) establishing new HMAs in Eastern Maine and on Fippennies Ledge where mobile bottom-tending gear is prohibited, (b) maintaining the Cashes Ledge Groundfish Closure Area with current restrictions and exemptions, (c) modifying both the Cashes Ledge and Jeffreys Ledge Habitat Closure Areas, which are closed to mobile bottom-tending gear, (d) prohibiting all fishing gear except lobster pots in the Ammen Rock Area, (e) maintaining the Western Gulf of Maine (WGOM) Habitat Closure Area, which is closed to mobile bottom-tending gear, (f) aligning the boundaries of the WGOM Groundfish Closure Area to match the WGOM Habitat Closure Area, (g) exempting shrimp trawling from the northwest corner of the WGOM areas, and (g) identifying the existing Gulf of Maine Roller Gear restriction as a habitat protection measure.[33]

As indicated above, the surfclam and ocean quahog fisheries was granted a one year exemption (which expired on April 8, 2019) for the Great South Channel and Georges Shoal HMAs following implementation of OHA2. The NEFMC has identified areas within the Great South Channel and Georges Shoal HMAs that are currently fished and may be suitable for a hydraulic clam dredging exemption that balances achieving optimum yield for the surfclam and ocean quahog fisheries with the requirement to minimize adverse fishing effects on habitat to the extent practicable and is consistent with the underlying objectives of OHA2. The Clam Dredge Framework Action has been submitted to NMFS and is expected to be finalized in 2019.[34]

[33] For additional information see: https://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf
[34] For additional information see: https://www.nefmc.org/library/clam-dredge-framework

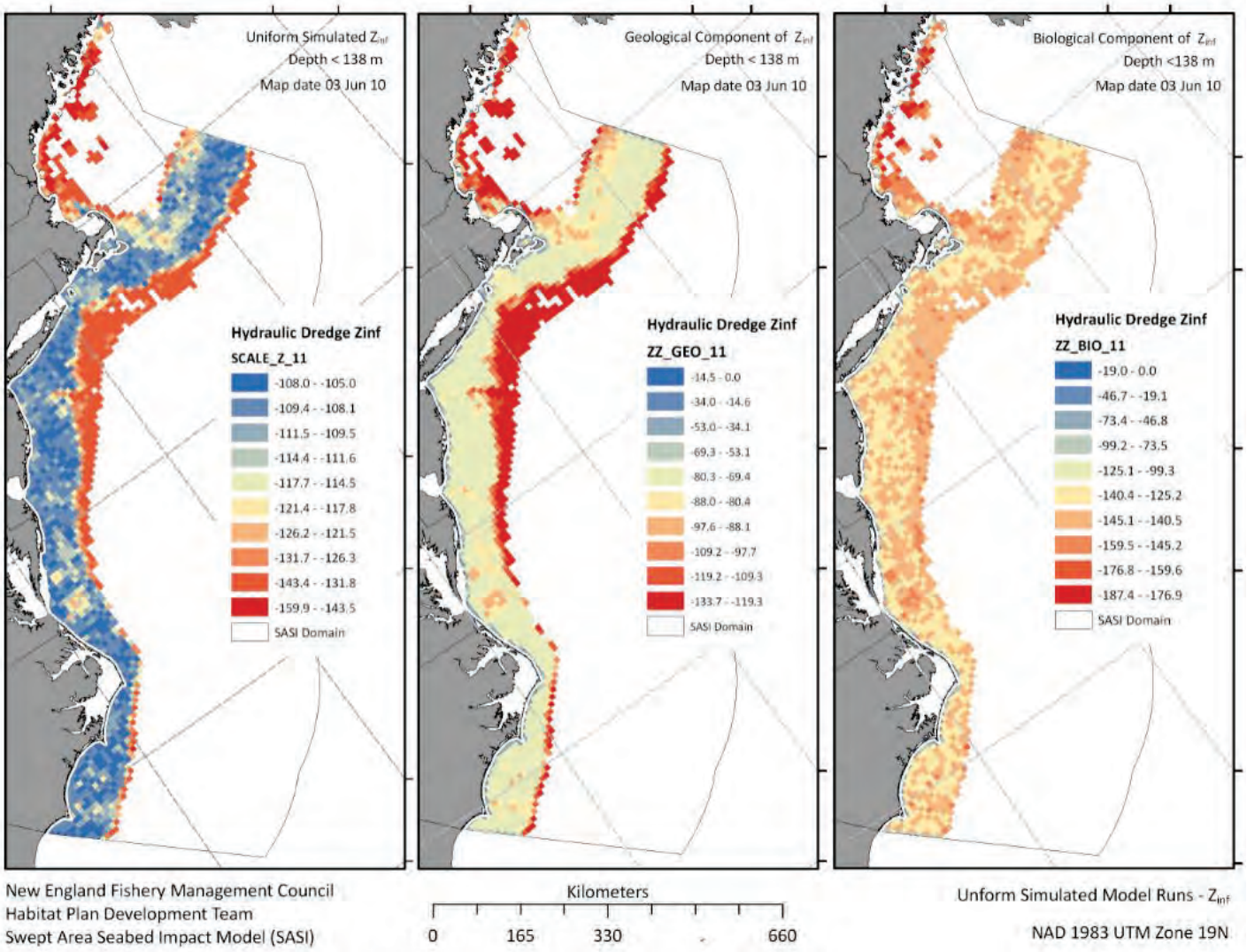


Figure 6. Simulation outputs (Z∞) for hydraulic dredge gear (left panel shows combined vulnerability of geological (mid-panel) and biological features (right-panel); blue=low vulnerability, red=high vulnerability).

Source: https://www.nefmc.org/library/omnibus-habitat-amendment-2

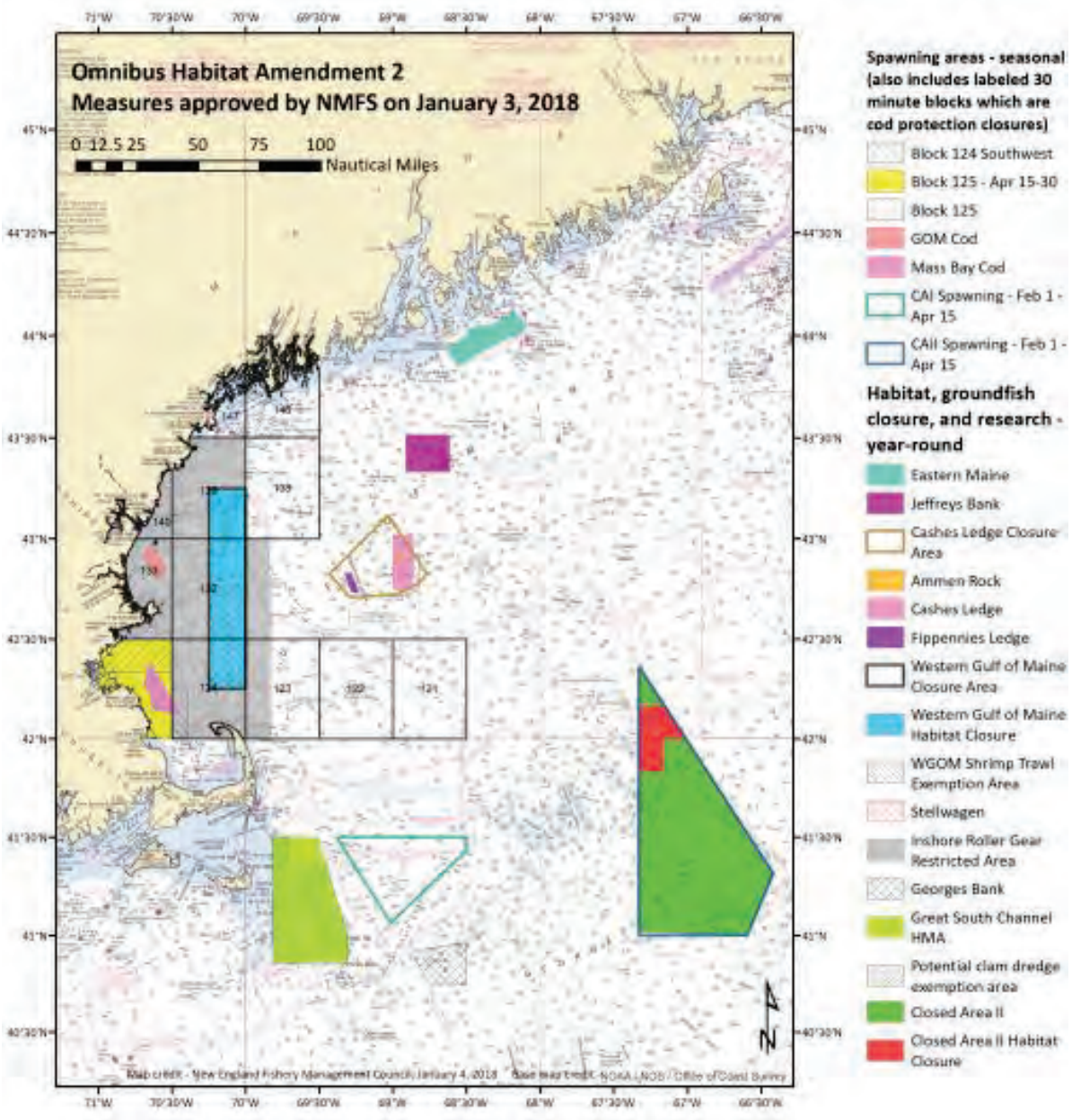


Figure 7. OHA2 approved regulations.
Source: https://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf

6.3 ESA and MMPA Protected Species

Numerous protected species inhabit the affected environment of the Atlantic Surfclam and Ocean Quahog FMP (Table 11; Hayes et al. 2017). These species are under NMFS jurisdiction and are afforded protection under the Endangered Species Act (ESA) of 1973 and/or the Marine Mammal Protection Act (MMPA) of 1972. More detailed description of the species listed in Table 11, including their environment, ecological relationships and life history information including recent stock status, are available at: http://www.greateratlantic.fisheries.noaa.gov/Protected/ and http://www.nmfs.noaa.gov/pr/sars/region.htm.

Cusk, alewife, and blueback herring are NMFS "candidate species" under the ESA. Candidate species are those petitioned species for which NMFS has determined that listing may be warranted under the ESA and those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. If a species is proposed for listing the conference provisions under Section 7 of the ESA apply (see 50 CFR §402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, these species will not be discussed further in this and the following sections; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed action. Additional information on cusk, alewife, and blueback herring can be found at: http://www.nmfs.noaa.gov/pr/species/esa/candidate.htm.

6.3.1 Species and Critical Habitat Not Likely to be Affected by the Proposed Action

The commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. Based on available information, it has been determined that this action is not likely to affect protected species (ESA-listed and/or MMPA protected; see Table 11). Further, this action is not likely to adversely affect any critical habitat for the species listed in Table 11. This determination was made because either the occurrence of the species is not known to overlap with the surfclam and ocean quahog commercial fisheries and/or there have never been documented interactions between the species and the primary gear type (i.e., clam dredge) used to prosecute the fisheries (Palmer 2017; NMFS NEFSC FSB 2015, 2016, 2017; see http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html and http://www.nmfs.noaa.gov/pr/sars/region.htm; https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries).

In the case of critical habitat, this determination has been made because the surfclam and ocean quahog fisheries will not affect the essential physical and biological features of North Atlantic right whale or loggerhead (Northwest Atlantic Distinct Population Segment, or DPS) critical habitat and, and therefore, will not result in the destruction or adverse modification of either species critical habitat (NMFS 2014; NMFS 2015a,b). See detailed discussion below.

As provided in Table 11 and Figure 8, North Atlantic right whale critical habitat also occurs in the affected environment of the surfclam/ocean quahog FMP. Critical habitat is habitat that contains physical and biological features essential to the conservation of the species. For right whales, it contains the features essential for successful foraging, calving, and calf survival (NMFS 2015a). Although comprised of two areas, only the area in the Gulf of Maine and Georges Bank region

(Unit 1) overlaps with the affected environment of the proposed action. Specifically, approximately half (372nm^2) of the Great South Channel (GSC) HMA overlaps with Unit 1 of critical habitat (21,334nm^2). This is 1.7% of the total right whale critical habitat. The action alternatives that propose alternative exemption areas for the fishery also have an overlap of less than 1.7%.

The boundaries of Unit 1 were defined by the distribution, aggregation and retention of *Calanus finmarchicus*, the primary and preferred prey of North Atlantic right whales, (NMFS 2015a,b). The essential physical features include prevailing currents, bathymetric features (such as basins, banks, and channels), oceanic fronts, density gradients, and flow velocities. The essential biological features include aggregations of copepods, preferably late stage *C. finmarchicus*, in the Gulf of Maine and Georges Bank region, as well as aggregations of diapausing (overwintering) populations in the deep basins of the region. NMFS (2015a,b) identified activities that may destroy or adversely modify these essential features; navigational dredging (termed "dredging") and commercial fisheries were amongst the activities analyzed and determined to not likely impact the identified foraging area physical or biological features.

"Dredging" as defined in NMFS's assessment (NMFS 2015a; 81 FR 4838, January 27, 2016) should not be confused with dredging using commercial fishing dredges, such as those used in the surfclam/ocean quahog FMP. In the assessment, dredging is in reference to the removal of material from the bottom of water bodies to deepen, widen or maintain navigation corridors, anchorages, or berthing areas, as well as sand mining (NMFS 2015a). Dredges typically used for navigational deepening or sand mining operations include hopper and cutterhead dredges. Although dredge size varies by location, hydraulic hopper dredges have draghead widths from a few feet to 12 feet; cutterhead diameters typically range from 16-20 inches (maximum 36 inches). These dredges disturb the sediment surface (down to 12 or more inches) creating turbidity plumes that last up to a few hours. In contrast, the surfclam/ocean quahog fishery uses hydraulic dredges to capture shellfish by injecting pressurized water into the sediment to a depth of 8-10 inches, creating a trench up to 30 cm deep and as wide as the dredge (approximately 12 feet) (Northeast Region Essential Fish Habitat Steering Committee 2002; see section 5.2.1 and Appendix B).

Navigational/sand mine dredging has not been found to limit the recovery of North Atlantic right whale (NMFS 2017a) or their critical habitat (NMFS 2015a). There is no evidence to suggest that this conclusion does not also hold true for dredging associated with commercial fishing operations. In terms of the surfclam/ocean quahog fishery, the scale and scope of hydraulic clam or mussel dredges is smaller than that associated with navigational/sand mining dredges. Turbidity created from such fishing dredges will be temporary in nature and will not impact the long-term viability of copepod aggregations. Fishing dredges, such as hydraulic clam, may also temporarily disturb localized copepod concentrations; however, these localized patches are continually replaced and/or shifting due to the dynamic oceanographic features of the Gulf of Maine (e.g., strong current, sharp frontal gradients, high mixing rates) that have a large effect on the distribution, abundance, and concentration of zooplankton populations in within the Gulf of Maine (NMFS 2015b). As provided above, one of the essential biological features of Unit 1 include aggregations of diapausing (overwintering) *C. finmarchicus* populations in the deep basins (i.e., Jordan, Wilkinson and Georges Basins) of the Gulf of Maine/Georges Bank Region. These basins provide refugia for diapausing populations of *C. finmarchicus* and serve as source populations for the annual

recruitment of copepods into the Gulf of Maine population (Davis 1987; Meise and O'Reiley 1996; Lynch et al. 1998; Johnson et al. 2006). In late winter, diapausing *C. finmarchicus* emerge from their dormant state and migrate to the surface layer where they are transported/advected to other areas within the Gulf of Maine by prevailing circulation patterns (Davis 1987; Baumgartner et al. 2007; Lynch et al. 1998; Johnson et al. 2006) . Depending on where copepods are transported, concentrated patches of copepods within the Gulf of Maine and GB region will be variable, both spatially and seasonally. Due to the dynamic physical oceanographic features of the Gulf of Maine and GB, copepods will continuously be advected from the deep ocean basins to areas throughout the Gulf of Maine and GB region. As hydraulic clam dredges do not operate in the deep basins of the Gulf of Maine /GB, these fishing gears will not affect or disrupt diapausing *C. finmarchicus* populations that are essential for populating the Gulf of Maine and George's Bank with right whales' preferred prey source. Based on this, although operation of the surfclam/ocean quahog FMP within regions of the Gulf of Maine or GB have the potential to cause temporary and localized disturbances of aggregations of copepods, it will not result in the permanent removal of the forage base necessary for right whale recovery. In addition, operation of hydraulic clam will not have any potential to affect the essential physical oceanographic features (i.e., currents, temperature, bathymetry) of Unit 1.

Given that (1) the impacts are temporary and localized, (2) the overlap of critical habitat and the alternatives is less than 1.7%, and (3) the activity is limited in scale and scope, the operation of the surfclam/ocean quahog fisheries will not affect the essential physical and biological features of North Atlantic right whale critical habitat and, therefore, will not result in the destruction or adverse modification of this species critical habitat (NMFS 2015a,b). The GSC HMA and proposed exemptions areas in the Great South Channel do not meet the adverse modification threshold and are not expected to impact right whale recovery.

Table 11. Species Protected Under the ESA and/or MMPA that may occur in the affected environment of the Atlantic surfclam and ocean quahog fisheries. Marine mammal species (cetaceans and pinnipeds) italicized and in bold are considered MMPA strategic stocks.

Species	Status	Potentially affected by this action?
Cetaceans		
North Atlantic right whale (Eubalaena glacialis)	*Endangered*	No
Humpback whale, West Indies DPS (Megaptera novaeangliae)	Protected (MMPA)	No
Fin whale (Balaenoptera physalus)	*Endangered*	No
Sei whale (Balaenoptera borealis)	*Endangered*	No
Blue whale (Balaenoptera musculus)	*Endangered*	No
Sperm whale (Physeter macrocephalus	*Endangered*	No
Minke whale (*Balaenoptera acutorostrata*)	Protected (MMPA)	No
Pilot whale (Globicephala spp.)[1]	*Protected (MMPA)*	No
Risso's dolphin (*Grampus griseus*)	Protected (MMPA)	No
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected (MMPA)	No
Short Beaked Common dolphin (*Delphinus delphis*)[2]	Protected (MMPA)	No
Bottlenose dolphin (Tursiops truncatus)[3]	*Protected (MMPA)*	No
Harbor porpoise (*Phocoena phocoena*)	Protected (MMPA)	No
Sea Turtles		
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered	No
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered	No
Green sea turtle, North Atlantic DPS (*Chelonia mydas*)	Threatened	No
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic Ocean DPS	Threatened	No
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered	No
Fish		
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	No
Atlantic salmon (*Salmo salar*)	Endangered	No
Atlantic sturgeon *(Acipenser oxyrinchus)*		
Gulf of Maine DPS	Threatened	No
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered	No
Cusk (*Brosme brosme)*	Candidate	No
Pinnipeds		
Harbor seal (*Phoca vitulina*)	Protected (MMPA)	No
Gray seal (*Halichoerus grypus*)	Protected (MMPA)	No
Harp seal (*Phoca groenlandicus*)	Protected (MMPA)	No
Hooded seal (*Cystophora cristata*)	Protected (MMPA)	No
Critical Habitat		
North Atlantic Right Whale	ESA (Protected)	No

[1] Due to the difficulties in discriminating short finned (*G. melas melas*) and long finned (*G. macrorhynchus*) pilot whales at sea, they are often just referred to as *Globicephala spp*.
[2] Called "common dolphin" before 2008.
[3] Includes the Western N. Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks.

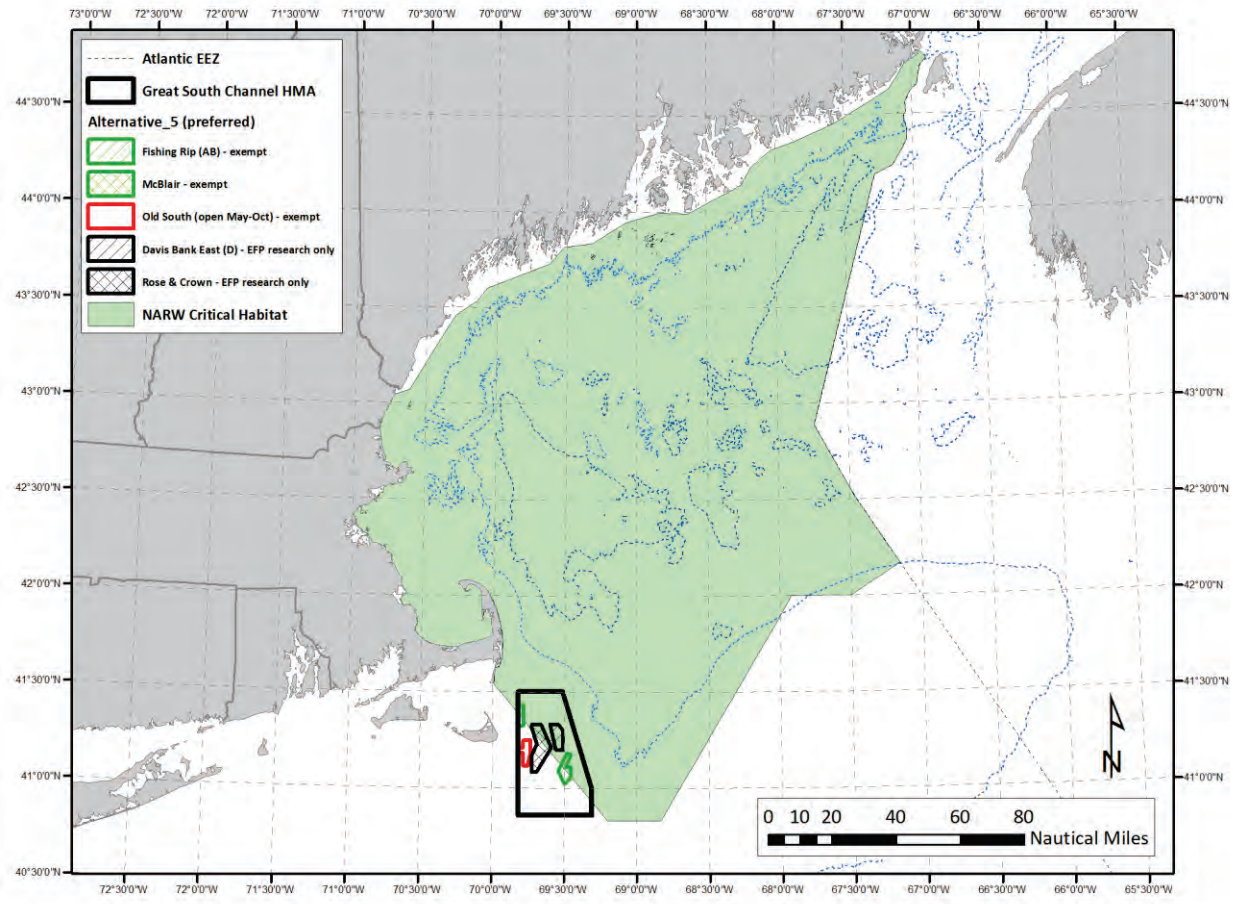


Figure 8. North Atlantic Right Whale Critical Habitat in the Gulf of Maine, GSC HMA, and proposed action exemption areas and research areas. Additional areas of critical habitat are designated along the coasts of South Carolina, Georgia, and Florida, but are not shown here.

6.4 Human Communities and Economic Environment

When Amendment 13 to the FMP was developed, the Council hired Dr. Bonnie McCay and her associates at Rutgers University to describe the ports and communities that are associated with the surfclam and ocean quahog fisheries. The researchers did an extensive job characterizing the three main fisheries (non-Maine ocean quahog, Maine ocean quahog, and surfclam). The McCay team characterizations of the ports and communities are based on government census and labor statistics and on observations and interviews carried out during the late 1990s and in the fall of 2001. The description of the fishing gear, areas fished, etc. are fully described in Amendment 13. Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs (MAFMC 2003). Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine (MAFMC 2018a and 2018b). The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market (MAFMC 2018b). The other

fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products (MAFMC 2018a and 2018b).

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: https://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php. In addition, Fishery Performance Reports prepared by industry advisors, provide additonal information on the social and economic environments from the industry members perspectives and are available at: http://www.mafmc.org. Recent trends in the fisheries are presented below and in Fishery Information Documents also available on the Council website.

6.4.1 Fishery Descriptions

6.4.1.1 Atlantic Surfclam

The total number of vessels participating in the surfclam fishery has remained relatively stable in the recent decade (Table 12). In 2017, about 2.2 million bushels of surfclams were landed, slighlty lower than 2016 at 2.3 million bushels. The average ex-vessel price of surflcams reported by processors was $13.90 in 2017, slightly higher than the $13.25 per bushel seen in 2016. The total ex-vessel value of the 2017 federal harvest was approximately $31 million, the same as 2016. Industry has described several factors that have affected their industry. Trips harvesting surfclams have increased in length as catch rates have declined (MAFMC 2009, 2010, 2013).

As indicated above, surfclams on Georges Bank were not fished from 1990 to 2008 due to the risk of PSP. There was light fishing on Georges Bank in years 2009-2011 under an exempted fishing permit and landings per unit of effort (LPUE) in that area was substantially higher (5-7 times higher) than in other traditional fishing grounds. NMFS reopened a portion of Georges Bank to the harvest of surfclam and ocean quahog beginning January 1, 2013 (77 FR 75057, December 19, 2012) under its authority in 50 CFR §648.76. Subsequently, NMFS reopened an additional portion of Georges Bank beginning August 16, 2013 (78 FR 49967). Harvesting vessels have to adhere to the recently adopted testing protocol developed by the National Shellfish Sanitation Program.

6.4.1.2 Ocean Quahogs

The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend. Trips harvesting quahogs have also increased in length as catch rates have declined steadily. (MAFMC 2009, 2010, 2013). The 30 or so vessels that reported landings during 2004 and 2005 has consolidated over time into fewer vessels.

The Maine ocean quahog fleet numbers started to decline when fuel prices soared in mid-2008, and a decline in the availability of smaller clams consistent with the market demand (i.e., half-shell market), and totaled 8 vessels in 2017 (Table 12).

The average ex-vessel price of non-Maine ocean quahogs reported by processors in 2017 was $7.18 per bushel, one cent higher than the 2016 price ($7.17 per bushel). In 2017, about 3.2 million bushels of non-Maine ocean quahog were landed, slightly higher than 2016 at 3.0 million bushels.

The total ex-vessel value of the 2017 federal harvest outside of Maine was approximately $23 million, slightly higher than the $22 million in 2016.

In 2017, the Maine ocean quahog fleet harvested a total of 34,550 Maine bushels, a 72% decrease from the 124,839 bushels harvested in 2006, and a 7% decrease from the prior year (2016; 37,051 bushels). Average prices for Maine ocean quahogs have declined substantially over the past 15 years. In 2003, there were very few trips that sold for less than $37.00 per Maine bushel, and the mean price was $40.66. Prices have since been lower; industry has indicated it was the result of aggressive price cutting. In 2017, the mean price was $31.15 per Maine bushel. The value of the 2017 harvest reported by the purchasing dealers totaled $1.1 million, a decrease of 78% when compared to 2003.

6.4.2 Description of the Areas Fished

A detailed description of the areas fished by the fisheries for surfclam and ocean quahogs was presented in the document titled “Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council” (Northern Economics, Inc. 2019).

The commercial fishery for surfclam in Federal waters is prosecuted with large vessels and hydraulic dredges. The distribution of the fishery as catch and LPUE is shown in Figures 9 and 10. The commercial fishery for ocean quahogs in Federal waters is prosecuted with large vessels and hydraulic dredges, and is very different from the small Maine fishery prosecuted with small vessels (35-45 ft).

6.4.3 Port and Community Description

Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs. Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine. The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products.

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: http://www.nefsc.noaa.gov/read/socialsci/communityProfiles.html and in Northern Economics, Inc. (2019).

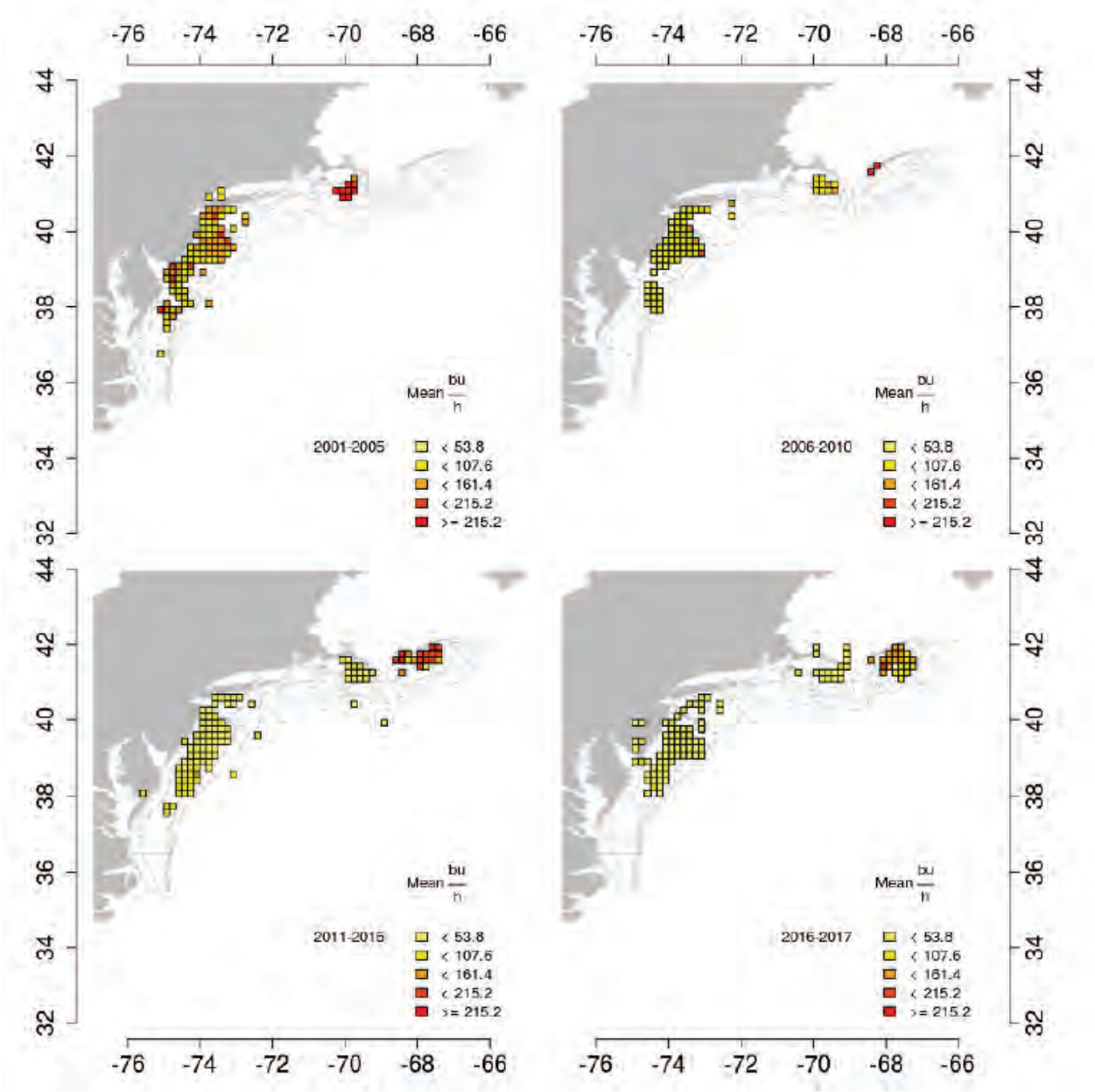


Figure 9. Average surfclam landings per unit effort (LPUE; bu h-1) by ten-minute squares over time, 2001-2016 and preliminary 2017. Only squares where more the 5 kilo bushels were caught are shown. Source: Dan Hennen Personal Communication, March 22, 2018.

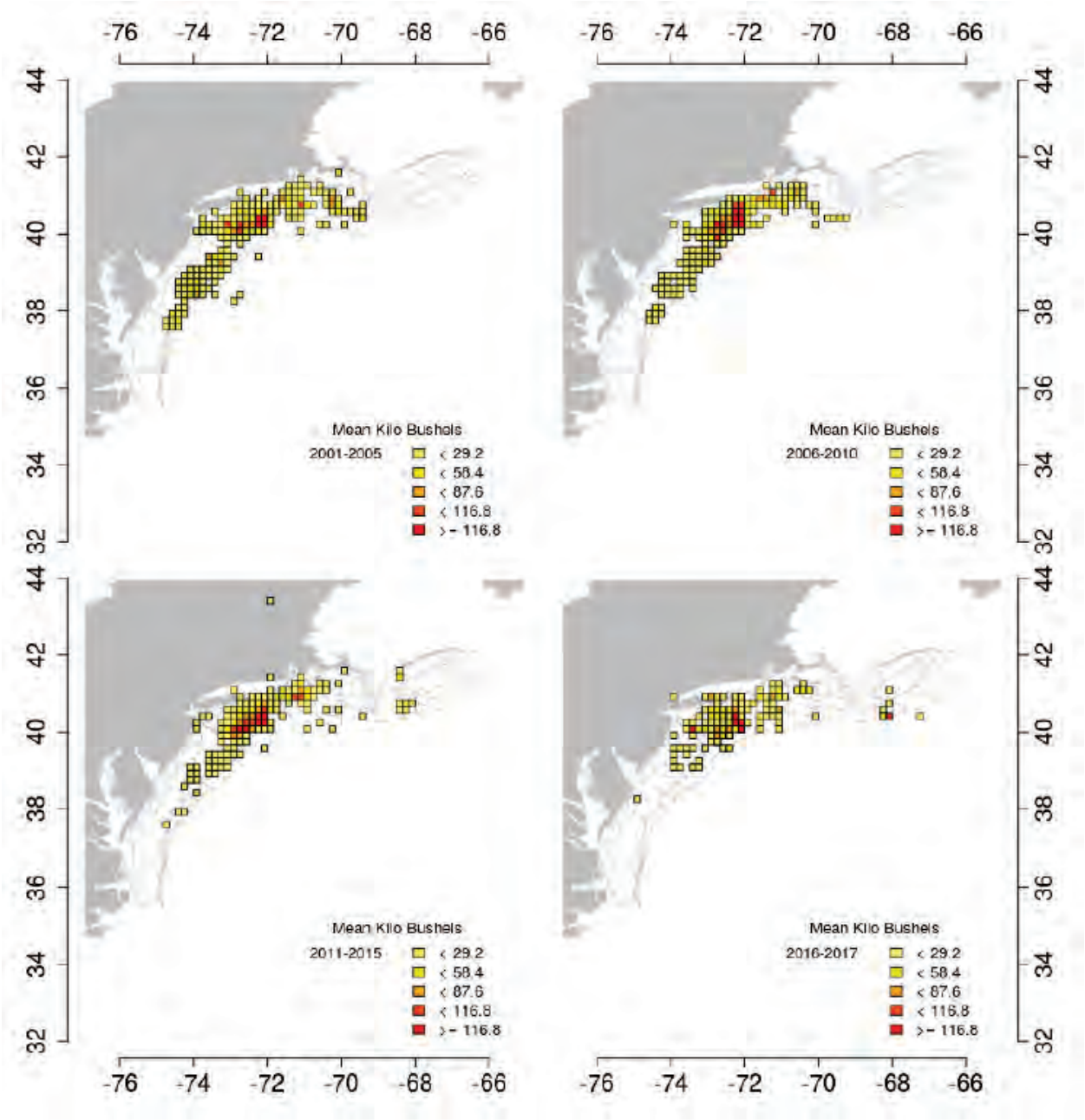


Figure 10. Average ocean quahog landings by ten-minute squares over time, 2001-2016, and preliminary 2017. Only squares where more the 5 kilo bushels were caught are shown.
Source: Dan Hennen Personal Communication, March 22, 2018.

6.4.4 Vessels and Dealers

Vessels

The total number of vessels participating in the surfclam fishery has been relatively stable from 2004 through 2017, ranging from 29 vessels in 2006 to 40 vessels in 2017 (Table 12). [35] The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend. Trips harvesting quahogs have also increased in length as catch rates have declined steadily (MAFMC 2009, 2010, 2013). The 30 or so vessels that reported ocean quahog landings during 2004 and 2005 was reduced and coast-wide harvests consolidated on to approximately 20 vessels in the subsequent years. The Maine ocean quahog fleet numbers started to decline with fuel prices soaring in mid-2008 and totaled 8 in 2017 (Table 12).

Initially, 154 vessel received ITQ allocation in 1990; however, in the last decade there have been fewer than 50 vessels participating in the fisheries each year. While it is not possible to accurately project future vessel consolidation patterns, it is possible that under additional vertical integration the number of vessels participating in the fisheries could decerase further. Vertically integrated companies could choose to retire older less efficient vessels (for larger, newer, more efficient ones). In addition, there could be further departure of the few independent harvesters still participating in the fisheries. In 2016 and 2017, a handful of independent vessels (less than 5) reported landings of surcalms and ocean quahogs.

Table 12. Surfclam and ocean quahog active vessels composition, 2004-2017.

Vessel-type	Harvested Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Non-Maine Vessels	Both surfclam & quahog	14	12	9	9	8	8	12	12	13	7	7	6	8	14
	Only surfclam	21	24	20	24	24	28	22	24	29	33	31	31	30	26
	Only quahog	15	12	9	8	10	7	9	7	6	9	9	10	9	8
	Total	50	48	38	41	42	43	43	43	48	49	47	47	47	48
Maine Vessels	Only quahog	34	32	25	24	22	19	15	13	12	11	9	8	8	8

Dealers

In 2017, there were 9 companies (i.e., dealers) reporting purchases of surfclam and/or ocean quahog from the industrial fisheries outside of Maine. These 9 companies operated 15 different facilities located in multiple states. They were distributed by state as indicated in Table 13. Employment data for these specific firms are not available. In 2017, these companies bought approximately $23 million worth of ocean quahog and $31 million worth of surfclam.

[35] The reported number of vessels participating in the surfclam and/or ocean quahog fisheries in this document are derived from clam logbook data unless otherwise noted.

Table 13. Number of facilities that reported buying ocean quahog and surfclam by state (from NMFS dealer/processor report database) in 2017.

	MA	NJ	Other
Number of Facilities	8	3	4

6.4.5 ITQ Program and Market Description

Initial ITQ Allocations

The FMP to manage these fisheries was initiated in 1977. The FMP and subsequent Amendments (i.e., Amendments 1 through 7) can be credited with rebuilding the surfclam stock and contributing to some economic stability in the industry. However, by the mid-1980s, rapid growth in harvesting capacity in the surfclam fishery and associated inefficiencies (e.g., vessels could only fish 36 hours per quarter) led to the development of the ITQ system (MAFMC 1988).

The initial allocations of ITQ quota share were made to owners of all permitted vessels that harvested surfclams and/or ocean quahogs in the Atlantic EEZ from 1979 through 1988. In general terms, the formula for allocating surfclams in the Mid-Atlantic Area was based on average historical catch (80% of the allocation) plus a "cost factor" (20% of the allocation) based on the vessel's capacity (length x width x depth; a proxy for the owner's capital investment). For ocean quahogs, the allocation was simply based on the average historical catch. This meant that the initial ITQ shares were allocated to owners of surfclam and ocean quahog vessels (MAFMC 1988).

However, there were very limited restrictions on transfer of quota shares or ownership in the ITQ system (MAFMC 1988). The ITQ program allows allocation owners to permanently transfer the ITQ quota share (i.e., sale, permanent transfer) or lease ITQ out (i.e., cage tag leasing, temporary annual transfer). Since ITQs are transferable, this allows for shifts in production to participants that may be more efficient.

In the years before the surfclam and ocean quahog ITQ system was implemented, there was a build-up in the number of vessels participating in these fisheries, as vessel owners sought to build-up catch histories in order to obtain more ITQ quota share upon program implementation.[36] When the ITQ system was implemented, there were 125 vessels participating in the surfclam and ocean quahog fisheries (Färe et al. 2015).

Trends in Consolidation

The original ITQ allocations went to owners of vessels that qualified for the program. The ITQ program provided a great deal of flexibility and some of the individuals that received initial allocations of ITQ quota share sold out, while others acquired additional shares.

[36] It is also possible that the increase in vessels in an owner's fleet may have been in response to management measures limiting fishing time per vessel.

The ITQ program contained very few restraints on ownership or transfers, and as such, the program was extremely effective in rapidly eliminating economically excessive capacity (National Research Council 1999). Harvesters could consolidate their catch onto fewer vessels that could then operate at or near full capacity. A number of vessel owners, including vertically integrated processors, had assembled large fleets during the 1980s, and thus many owners were in a position to take one or more of their vessels out of the surfclam fishery to economize (McCay and Brandt 2001). Furthermore, some vessel owners took advantage of the surfclam and ocean quahog ITQ program to divest themselves of the older vessels they had accumulated during the moratorium, while other owners chose to lease their ITQ quota share to others or to leave the surfclam fishery entirely (McCay and Brandt 2001). The major decrease in the number of vessels participating in the clam fisheries occurred, as expected, at the onset of the program. There has been a large degree of further consolidation in the last 30 years.

For the 3 years (1987-1989) prior to the implementation of the ITQ system, there were on average, 137 and 67 active vessels fishing for quota in the surfclam and ocean quahog fisheries, respectively. On average, for the 5 years after the ITQ program implementation (1990-1995), the number of active vessels participating in the surfclam fisheries decreased to 73 vessels and the number of active vessels participating in the ocean quahog fisheries increased to 76 vessels (Brinson and Thunberg 2013, 2016). Further reductions in the number of active vessels participating in these fisheries occurred through time. In 2017, there were 48 vessels participating in these fisheries combined (Table 12). One of the goals of the ITQ system in these fisheries was to reduce fleet capacity; this goal was met, as more efficient operations purchased the quota share of less efficient operations, removing redundant capital from the fisheries.

Upon the program implementation in 1990, there were 154 entities (i.e., unique surfclam allocation holders/vessel owners) that received an initial Atlantic surfclam quota share. The number of entities receiving quota share decreased to 116 after the first year of implementation. The number of entities holding surfclam quota share remained relatively stable for the 1991 to 2000, ranging from 107 to 117 (Brinson and Thunberg 2013). Since 2005 the number of entities holding surfclam quota share declined from 81 (Brinson and Thunberg 2013) to 67 in 2017 (2017 Atlantic surfclam ITQ Allocation Holder Report).[37]

There were 117 entities (i.e., unique ocean quahog allocation holders) that received an initial ocean quahog quota share in 1990. The number of entities receiving quota share decreased to 82 after the first year of implementation. There was a slight steady reduction from year to year in the number of entities holding quota share from 1992 (82 entities) to 2003 (62 entities; Brinson and Thunberg 2013). However, since 2004 the number of entities holding surfclam quota share declined from 56 (Brinson and Thunberg 2013) to 37 in 2017 (2017 Atlantic surfclam ITQ Allocation Holder Report).[37]

There have been other reasons for consolidation. The cost of fuel prices and the distance needed to travel to harvest clams, which cascades through the vessel, processors, ports, etc., and has put greater emphasis on economy on scale and location, leading to additional consolidation (Surfclam and Ocean Quahog Advisory Panel 2016). Other factors that have caused stress in the industry have also resulted in additional consolidation. For example, in 2005 a series of conditions resulted

[37] Available at: https://www.greateratlantic.fisheries.noaa.gov/sustainable/species/clam/

in a substantial portion of the industrial fleet leaving the clam fishery and greatly reduced operations at the second-largest processor in the clam industry. Eastern Shore Seafood Products of Mappsville, Virginia was a vertically-integrated company operating both vessels and a processing plant (Northern Economics, Inc. 2019). In 2005, a deal was struck in which ownership of the plant and vessels were given over to an entity including the Truex, Meyers, Truex Group, and the Sea Watch management team. In May of 2008 the Mappsville plant ceased operations altogether and moved the processing work to other Sea Watch plants in Easton, Maryland and Milford, Delaware (Vaughn 2008).

A myriad of factors has contributed to the difficulties in the clam industry. Major users of clam meats have reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace. Trips harvesting surfclams have increased in length as catch rates have declined. All of these factors and more have resulted in clam-related businesses becoming less profitable in recent years. Consolidation and concentration in the industry has grown as the businesses in the strongest financial condition assimilate those in the weakest position (MAFMC 2009, 2010).

Processors were not directly incorporated into the initial allocation of quota; however, processors owning permitted vessels received the allocations associated with those vessels. Some processors or processors affiliates have developed quota ownership through either the acquisition of vessels and accompanying quota or the acquisition of quota directly (Mitchell et al. 2011).

Historically, vertically-integrated firms have been involved in the surfclam and ocean quahog fisheries. Some of these were subsidiaries of multinational food corporations with fleets of a dozen or so boats; others a family business with large fleets; and yet others were small rural processing operations with one or two boats of their own. The ability of processors to rely on their own vessels to supply raw product for their plants gave them bargaining power vis à vis the “independents” (McCay and Brandt 2001). With implementation of the ITQ program, an industry already marked by the dominance of a few large vertically integrated firms became even more so, as small-holders either sold out or chose to lease out their allocations rather than continue to fish (McCay et al. 2011).

In order for processors to meet delivery schedules set by their customers (many of which are large consumer goods companies, such as Progresso or Campbell Soup Company, or large food service companies, such as Sysco) results in that virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates. Processors need to be able to direct vessels to harvest at certain times, weather permitting. Given these scheduling requirements, it is not generally possible for a vessel to harvest for more than one processor and still meet the scheduling needs of the processors. Vessels must have quota at the time they harvest clams. Therefore, processors or fishers must arrange for the quota that the vessels require prior to leaving port. As a result of the need to harvest on a schedule, virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates (Mitchell et al. 2011).

Under the ITQ program, the ownership of ITQ quota share has replaced the ownership of surfclam vessels as a way to secure the supply of surfclams as raw materials. Prior to the ITQ program, only

surfclam vessels with moratorium permits were allowed to harvest surfclams in the Mid-Atlantic Area, the predominant surfclam area. As a result, clam processors owned and operated surfclam vessels to secure the supply of surfclams. However, any U.S. registered vessels are allowed to harvest surfclams under the Atlantic surfclam and ocean quahog ITQ program as long as they hold surfclam ITQ quota share. Therefore, the ownership of ITQ quota share becomes the key element. In fact, some of the integrated processors have abandoned their vessel operations and focused on securing the ownership of ITQ quota share (Wang 1995).

The HHI is a commonly accepted measure of market concentration (an indicator of the amount of competition in the marketplace). The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. According to the U.S. DOJ & Federal Trade Commission (FTC), Horizontal Merger Guidelines § 5.3 (2010), transactions that increase the HHI by more than 200 points in highly concentrated markets are presumed likely to enhance market power. [38]

NMFS data also show that the concentration of harvesting has risen substantially in the last decade, largely as the result of the backward integration of clam processors into harvesting (Mitchell et al. 2011). The processing sector itself has also changed. In 1979, there were 44 plants that processed either surfclams or ocean quahogs. The HHI of purchases by processors grew between 2003 and 2008 from 2,068 to 3,134 for surfclams and from 3,431 to 4,369 for ocean quahogs (Mitchell et al. 2011). Concentration has fallen somewhat after peaking in the surfclam and ocean quahog fisheries at 3,675 and 4,629, respectively, in 2007. The HHI of processor purchases for surfclams and ocean quahogs combined has also grown, from 2,226 in 2003 to 3,479 in 2008. In 2017, there were nine firms operating 15 plants in multiple states (section 6.4.4).

In addition, NMFS has also conducted an analysis of quota usage by examining records showing the harvest amounts for vessels in the surfclam and ocean quahog fisheries and tracing their ownership. This analysis indicated that the HHI of harvesting activity for surfclams in 2008 was 4,080 and the HHI of harvesting activity for ocean quahogs was 2,653. The HHI of harvesting activity for surfclam and ocean quahog combined was 2,890. Lastly, the HHI of ownership (quota ownership) of surfclam quota in 2009 was 1,167, and the HHI of ownership of ocean quahog quota was 993 (Mitchell et al. 2011).

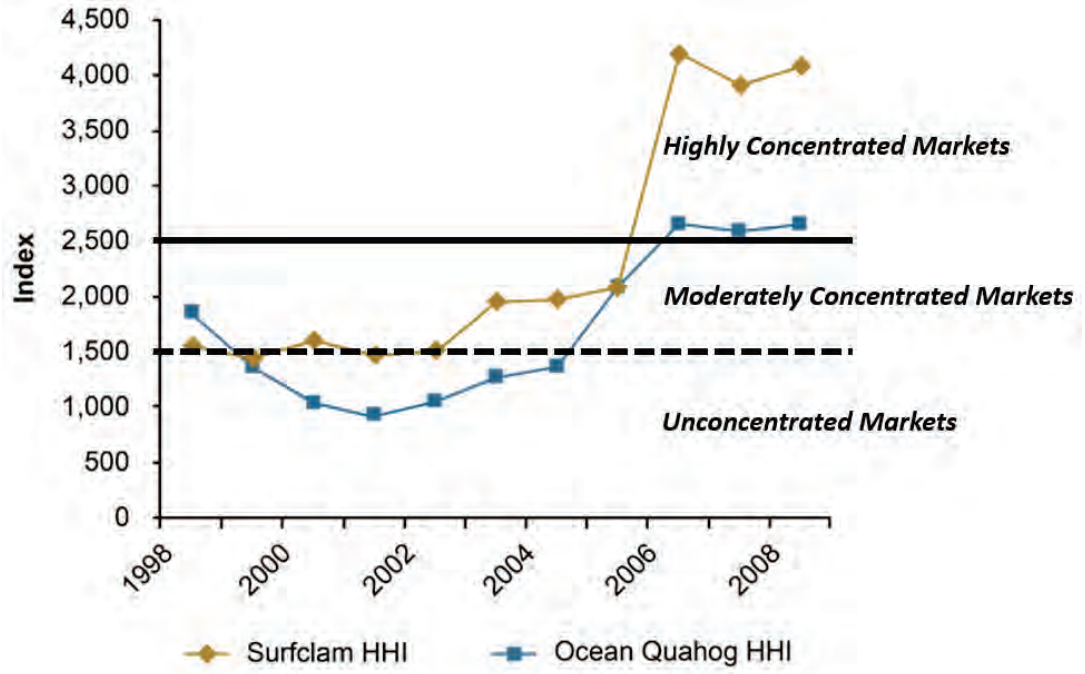
The HHI of harvesting (2006-2008) and processing (2005-2008) in the surfclam and ocean quahog fisheries estimated by NMFS (NMFS 2009) would be considered highly concentrated by the DOJ. Updated HHI values for the harvesting and processing sectors (John Walden, Pers. Comm., NEFSC 2019) are presented in Figures 11 and 12. These figures indicate that the harvesting and

[38] The HHI is equal to the sum of the squared market shares of the participants in the market. Thus, if there are three firms with shares of 50%, 30%, and 20%, the HHI is equal to 3,800 ($3,800 = 50^2 + 30^2 + 20^2 = 2500 + 900 + 400 = 3800$). The HHI value approaches zero when a specific market comprises a large number of similar firms, and reaches 10,000 when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. Markets in which the HHI is between 1,500 and 2,500 points are typically considered to be moderately concentrated and markets in which the HHI is in excess of 2,500 points are considered to be highly concentrated. https://www.justice.gov/atr/herfindahl-hirschman-index

processing sectors for the surfclam and ocean quahog fisheries continue to be highly concentrated (2016-2018). The processing sector HHI values for 2016-2018 were calculated using the same methods as were used through 2008. However, the harvesting sector HHI values for 2016-2018 were calculated by using an algorithm to assign vessels to ownership groups based on permit data and other publicly available data sources (John Walden, Pers. Comm., NEFSC 2019). However, in order to identify ownership for the 2016-2018 period, vessel ownership data was used in conjunction with permit database to identify all the individuals who own one or more vessels by firm. This was the result of an improved database that provided the information in one place. In addition, online resources provided additional company and vessel information to identify vessel ownership.

The HHI values of ownership (quota ownership) for surfclam quota and ocean quahog quota were not updated. As previously stated, the Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power (monopoly/oligopoly) is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries. While it is possible that current HHI values of quota ownership (for both surfclam quota and ocean quahog quota) are likely to be slightly higher than those reported in 2009 (see penultimate paragraph above), those values are likely to not be of concern. This is based on the maximum quota ownership values reported in Tables 2 and 3, and the considerably large 2017 number of ITQ ownership holders in both fisheries as described above.

A) 1999-2008



B) 2016-2018

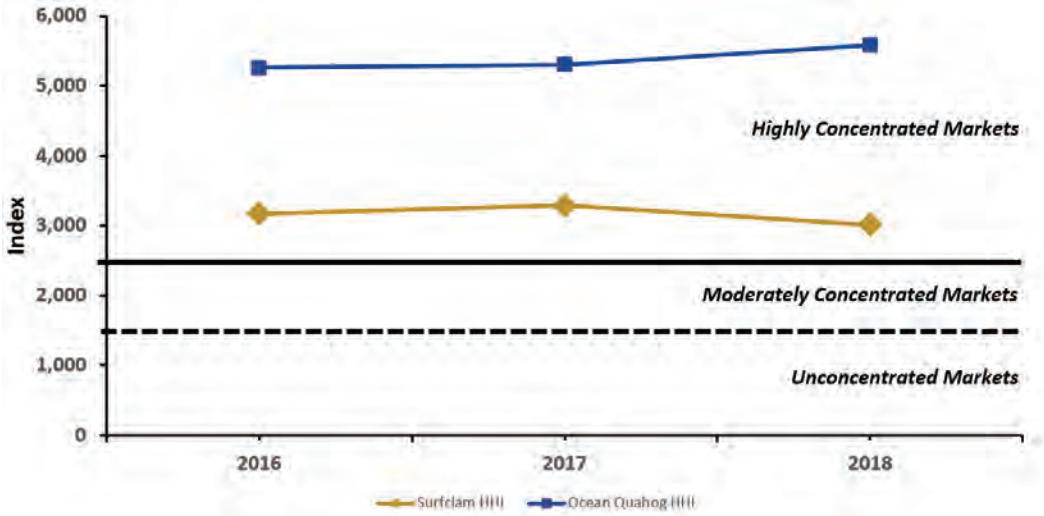


Figure 11. Herfindahl-Hirschman Index (HHI) of Market Concentration in Surfclam and Ocean Quahog Harvesting Sector, 1998-2008 (adapted from NMFS (2009)) and updated 2016-2018.

Note: As defined by DOJ, HHI values below the dashed horizontal line (1,500) shows Unconcentrated Markets; HHI values between the dashed horizontal line (1,500) and solid horizontal line (2,500) shows Moderately Concentrated Markets; HHI values above the solid horizontal line (2,500) shows Highly Concentrated Markets.

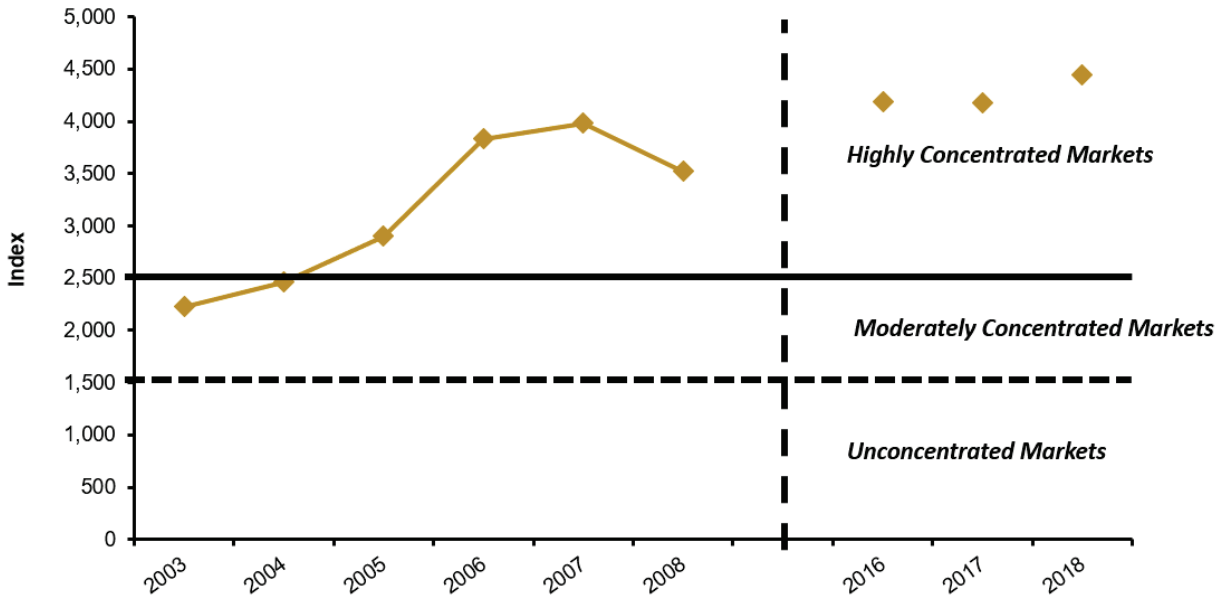


Figure 12. Herfindahl-Hirschman Index (HHI) of Market Concentration in Surfclam and Ocean Quahog Processing Sector (largely Vertically-Integrated), 2003-2008 (adapted from NMFS (2009)) and updated 2016-2018.

Note: As defined by DOJ, HHI values below the dashed horizontal line (1,500) shows Unconcentrated Markets; HHI values between the dashed horizontal line (1,500) and solid horizontal line (2,500) shows Moderately Concentrated Markets; HHI values above the solid horizontal line (2,500) shows Highly Concentrated Markets.

Brief Discussion on Market Power and Impacts on Competition

The Atlantic surfclam and ocean quahog limited access privilege program (LAPP) allows for the legal transferability of the "ownership" privileges. The advantage of transferability is that it provides flexibility and incentives to shift harvesting to lower cost vessels, which improves overall profitability of the fishing fleet. Some people argue that transferability has the potential to disrupt existing industry structure and also allows for fishery participants to gain from the sale of harvesting privileges rather than to use them to harvest fish. Since harvesting privileges are given away gratis on an annual basis, individuals or firms given these privileges can profit merely by holding quota, rather than fishing.

While transferability of harvesting privileges offers many potential advantages, a concentration of ownership can lead to several different types of problems. This can include problems with market power in the final product market (monopoly: a single seller; oligopoly: a few sellers), the input market (monopsony: a single buyer; oligopsony: a few buyers) for the fishery resource, or the quota share market. These problems are not unique to fisheries under LAPPs and can occur in other sectors of the economy as well. An additional problem associated with excessive ownership is that it can lead to undesired changes in the structure of the fishing community broadly defined (NMFS 2007).

One of the most obvious market power issues is monopoly power (pricing power on the product market), that could result from accumulation of significant quota shares. The pursuit of monopoly profits will lead to artificial reduction in output in the final fishery resource (product market) or also in the quota share market and increase in prices to the consumer. However, in most instances the risk of this happening is fairly small because the product from any one LAPP must compete with similar products from domestic and international fisheries. Unless the LAPP is associated with a unique fishery product with a separate niche market, this is unlikely to become a problem (NMFS 2007). Furthermore, processors in the surfclam and ocean quahog fisheries report that in order to meet the schedules set by their customers (many of which are large consumer goods companies, such as Progresso or Campbell's, or large food service companies, such as Sysco and others), virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates.[39] Processors also indicate that these large sophisticated buyers are able to exert significant pricing power because of their large purchases and because they have the capability to substitute imported clams for domestic clams in their products if prices warrant.[40] The threat created by the ability of major customers to use other sources of clams has the potential to limit any efforts by processors to raise prices above competitive levels, and processors report feeling the effects of this pressure from their large customers (Mitchell et al. 2011).

The Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power (monopoly/oligopoly) is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries.[41] It is possible that under some circumstances an excessive shares cap of 100% may be appropriate for some fisheries. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011).

The CIE review of the Compass Lexecon report indicated that more attention should had been paid to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[42] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry and there with a small number of vessels and processors predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern than monopolization in the output market (Walden 2011).

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[39] Therefore, processors do not "post" a price that they are willing to pay for clams at unloading points. There is no "spot" market for surfclams or ocean quahogs (Mitchell et al. 2011).

[40] Imports of other clam species also provide a substitute for some uses (and a small portion of the domestic surfclam and ocean quahog harvest is exported). Processors report competition from imported clams from a number of countries, including Canada, Thailand, Chile, and others (Mitchell et al. 2011). Lastly, it is possible that clam meat competes with other proteins in some uses. Data are not available to rigorously evaluate whether other proteins, such as chicken or shrimp, compete with clam meat sufficiently that the prices of these substitute proteins substantially constrain the price of clam meat (Mitchell et al. 2011).

[41] The Compass Lexecon report did not analyse whether market power is exercised through the withholding of harvesting or processing, or through exclusionary conduct other than conduct involving quota ownership (Mitchell et al. 2011).

[42] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

An analysis was conducted by NMFS in 2009 to assess excessive share issues in the surfclam and ocean quahog ITQ fisheries. They found that while the ownership of ITQ quota share is mildly concentrated for surfclam ITQ quota share and unconcentrated for ocean quahog ITQ quota share, the use of quota is highly concentrated. The concentration of harvesting has risen substantially during the ITQ program largely as the result of the backward integration of processors into harvesting and the proliferation of long-term contracts among ITQ quota share owners, vessel owners, and processing firms.

As a result of this increase in vertical integration and in long-term contracts, processors now have direct or indirect control over the use of the majority of ITQ quota share in the surfclam and ocean quahog fisheries (NMFS 2009). NMFS examined the possibility that control over such a large amount of ITQ quota share is leading to lower prices paid to independent vessels for their harvest. A formal tests for oligopsony power (few buyers) by surfclam and ocean quahog processors was not done in the analysis conducted by the NMFS in 2009. They presented both landings and ex-vessel price trends, but not draw any conclusions about why these trends are occurring. However, the 2009 NMFS report indicated that over the past 40 years, net exit has occurred in both the harvest and processing sectors for a variety of reasons. For example, some of the major factors may have included:

1) declines in resource biomass of both species, particularly off southern states and in waters closer to shore
2) declining catch rates for surfclams beginning in 2001
3) lack of access to the surfclam and ocean quahog resources on Georges Bank due to PSP
4) increasing costs of vessel operation, particularly fuel and insurance
5) changing the federal fisheries management program from effort-based regulations to individual transferable quotas. Decoupling harvest rights from vessels allowed unneeded vessels to exit the fisheries
6) industry's shift to using larger vessels with greater capacity necessitates fewer of them

For the processing sector, factors that may have led to fewer firms include:
1) decreased resource availability (as with the vessel sector);
2) changing consumer tastes for clam products;
3) the high capital costs of modern clam plants;
4) and perhaps most importantly, the high cost of equipment required to comply with stricter wastewater discharge regulations which resulted in many plants shutting down.

Taken together, these have led to the vertically integrated industry and the oligopsony market for surfclams and ocean quahogs which now exists according to the NMFS report.

Lastly, an additional type of problem that can result from concentration of ownership has to do with the lifestyle of fishing households and fishing communities. There could be significant philosophical support for the maintenance of a fishery composed of many diverse individuals. According to this opinion, even if concentration will not produce market power problems, it is something to be avoided for its own sake. However, this trade-off in economic returns from the fishery resource to maintain a social or community structure is a policy and prioritization question the Councils must sort through (NMFS 2007).

Total Allocations Being Fished

Table 14 shows surfclam and ocean quahog cage tag utilization by small and large allocation owners for the 2004-2006 and 2017 periods. In 2017, 35.7% of the surfclam quota was unused. The number of unused allocations for surfclams (based on 67 allocation holders) was 5, about 7%. For ocean quahog in 2017, 40.9% of the quota was unused. The number of unused allocations for ocean quahog (based on 37 allocations holders) was 15, about 41%. Of those allocation holders using their tags, 64% of surfclams and 59% of ocean quahog tags were used.

In the ocean quahog fishery, the proportion of cage tags not used is higher for small allocation owners when compared to large allocation owners for 2004-2006 and 2017. In the surfclam fishery, the proportion of cage tags not used is higher for small allocation owners when compared to large allocation owners for all years except 2017. In 2017, the small allocation owners left 11% of their cage tags unharvested, while large allocation owners did not use 39% of their cage tags. However, a closer look at the surfclam allocation ownerships for 2017, indicated that a large number of small allocation owners may also be owners of large allocations via partnerships and other complex contracting business practices that are prevalent in the fisheries. It is possible that some of the owners that have both, small and large surfclam allocations, may be harvesting the tags associated with their small allocations first before utilizing the tags associated with their larger allocations. For the years evaluated, the percentages of unused cage tags for small and large allocations owners tend to be relative closer to each other when larger proportions of the available quotas are harvested.

Transfer of Allocations

In these fisheries both permanent and temporary transfers occur. Temporary transfers can only be tracked annually and occur for many reasons. Bank lenders hold approximately 1/5 of the allocations; so, temporary transfers of tags by bank lenders and between related and unrelated business and corporate entities are frequent. In 2016, 41% of the surfclam tags and 26% of the ocean quahog tags were temporarily transferred (Northern Economics, Inc. 2019).

Table 14. Atlantic surfclam and ocean quahog allocation usage for 2004-2006 and 2017.

Year	Quota (million bushels)	Landings (million bushels)	% of quota unused	Total # allocations issued	Total # allocations that did not use any cage tags	Allocation owner by size*	% of total quota owned	# cage tags issued	# cage tags used	% cage tags unused
Surfclam										
2004	3.400	3.138	7.7%	84	2	Small Owners (43)	17.5%	18,641	17,068	8.4%
						Large Owners (41)	82.5%	87,614	80,821	7.8%
2005	3.400	2.744	19.3%	82	6	Small Owners (42)	18.2%	19,389	15,519	20.0%
						Large Owners (42)	81.8%	86,893	71,136	18.1%
2006	3.400	3.057	10.1%	82	7	Small Owners (41)	17.6%	18,731	13,381	28.6%
						Large Owners (40)	82.4%	87,551	81,347	7.1%
2017	3.400	2.186	35.7%	67	5	Small Owners (33)	11.7%	12,430	11,226	9.7%
						Large Owners (34)	88.3%	93,852	57,338	38.9%
Ocean Quahog										
2004	5.000	3.890	22.2%	56	9	Small Owners (28)	3.3%	5,146	3,172	38.4%
						Large Owners (28)	96.7%	150,887	116,887	22.5%
2005	5.333	3.006	43.6%	56	19	Small Owners (28)	3.3%	5,483	2,460	55.1%
						Large Owners (28)	96.7%	160,944	131,036	18.6%
2006	5.333	3.147	41.0%	56	23	Small Owners (28)	3.3%	5,483	2,253	58.9%
						Large Owners (28)	96.7%	160,944	94,231	41.5%
2017	5.333	3.149	40.9%	37	15	Small Owners (18)	4.0%	6,626	3,363	49.2%
						Large Owners (19)	96.0%	159,738	93,972	41.2%

*Allocations were considered to be "Small" or "Large" by sorting them from the smallest number of bushels to the largest, and then using the median to break them into two groups.

Landings, Quota Utilization, and Market Trends

Surfclams and ocean quahogs are processed into a variety of different products. The dominant use of surfclams has been in the "strip market" to produce fried clams. In recent years (Mid-2000s on), however, they have increasingly been used in chopped or ground form for other products, such as high-quality soups and chowders (MAFMC 2010). The dominant use of ocean quahogs has been in products such as soups, chowders, and white sauces. Their small meat has a sharper taste and darker color than surfclams, which has not permitted their use in strip products or the higher-quality chowders products (MAFMC 2010).

The quotas and landings levels and the percent of quota landed from 1980-2017 for surfclams and ocean quahogs are shown in Figures 13 and 14, respectively. For most years from 1990 (when the ITQ system was implemented) to 2003, the surfclam harvest levels were near or at full quota level. However, for the last decade or so (2008-2017), surfclam production has been below the quota. Surfclam landings have not reached the quota of 3.4 million bushels since it was set in 2004. It should be noted that both changes in landings and the changes in quota levels affect the quota utilization shown in Figures 13 and 14. Surfclam landings in 2017, reached a record low at 2.2 million bushels, the lowest landings level since the ITQ system was implemented which also corresponds to the lowest quota utilization (percentage of quota landed). In the last fifteen years, a downward trend in landings of surfclams is observed (Figure 13).

On the other hand, ocean quahog landings have consistently been below the quota for most years since 1990. Industry utilization of ocean quahogs has varied across the years, influenced by market conditions and the costs of harvesting. There was a shift toward greater utilization of quahogs in 1997 and 1998. Both years saw almost all of the quota harvested, while surfclam quota was left unharvested. However, this trend reverted back to the historical norm in 1999 as fuel prices spiked, when it became more expensive to harvest ocean quahogs that are found farther offshore. Higher fuel prices combined with increasing scarcity of dense ocean quahog beds resulted in an overall decline in ocean quahog harvests (MAFMC 2010). During 2001-2004, there was again a brief increase in ocean quahogs landings, with 80% or more of the ocean quahog quota landed. In the last fifteen years (2003-2017), a downward trend in landings of ocean quahogs is observed (Figure 14). Ocean quahog landings in 2017, were 3.1 million bushels, which also corresponds to one of the lowest quota utilizations (percentage of quota landed) since the ITQ system was implemented in 1990. Ocean quahog landings have not reached the quota of 5.3 million bushels since it was set in 2005.

According to industry members, the reduction in landings for surfclams and ocean quahogs in the mid-2000s was due to several factors related to reduction in product marketing/advertisement (e.g., clam chowder), limited markets, and competition from imported clams that are available from a relatively large number of countries, including Canada, Thailand, Vietnam, China, and Chile (MAFMC 2009, 2010, 2013; Mitchell et al. 2011). Surfclam and ocean quahog landings have been mainly constrained by market limitations.

Industry members have consistently asked the MAFMC to set the surfclam and ocean quahog quotas at levels lower than the overall ABC but to set the quotas for these two species at levels that are much larger than the market demand (landings) since the mid-2000s.

In 2017, there were companies that reported purchases of surfclam and/or ocean quahog from the industrial fisheries outside of Maine. These 9 companies operated 15 different facilities located in various state. Some of these companies have facilities in multiple states (section 6.4.4). For the most part, processors aim to meet supply schedules set by their customers which are large consumer good companies, such as Progresso or Campbell's, or large food service companies, such as Sysco. This requires that most clams are harvested and processed to meet set schedules.

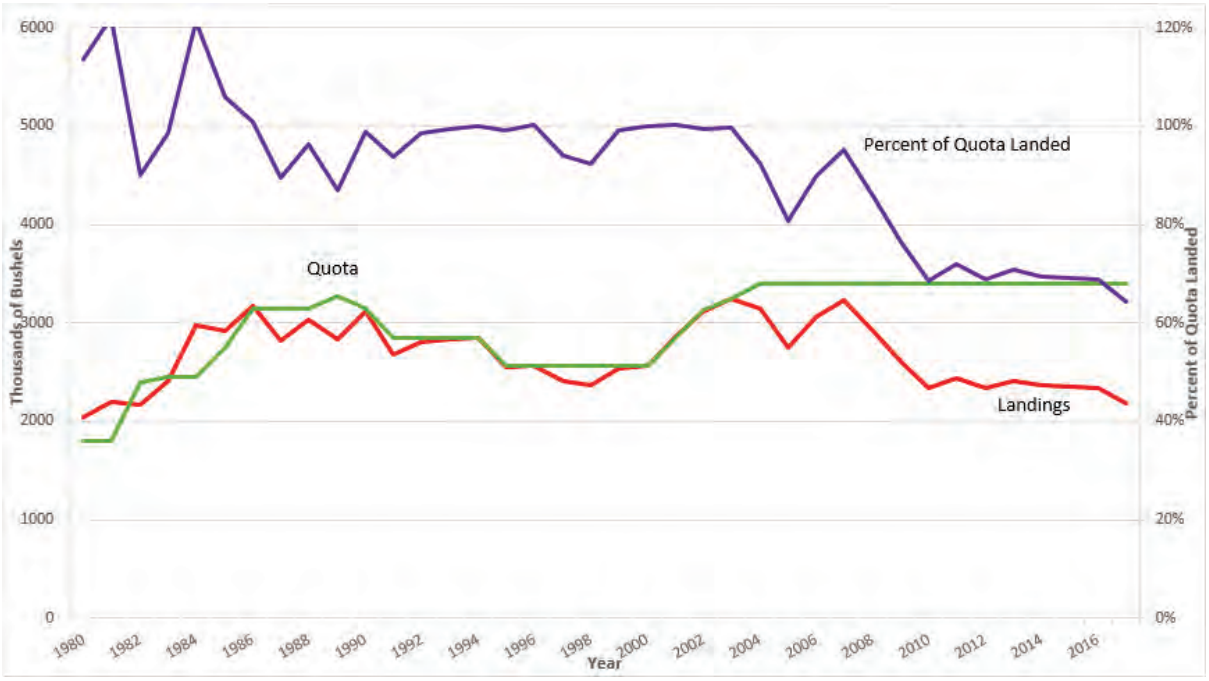

Figure 13. Surfclam landings, quotas, and percent of quotas landed, 1980-2017.
Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

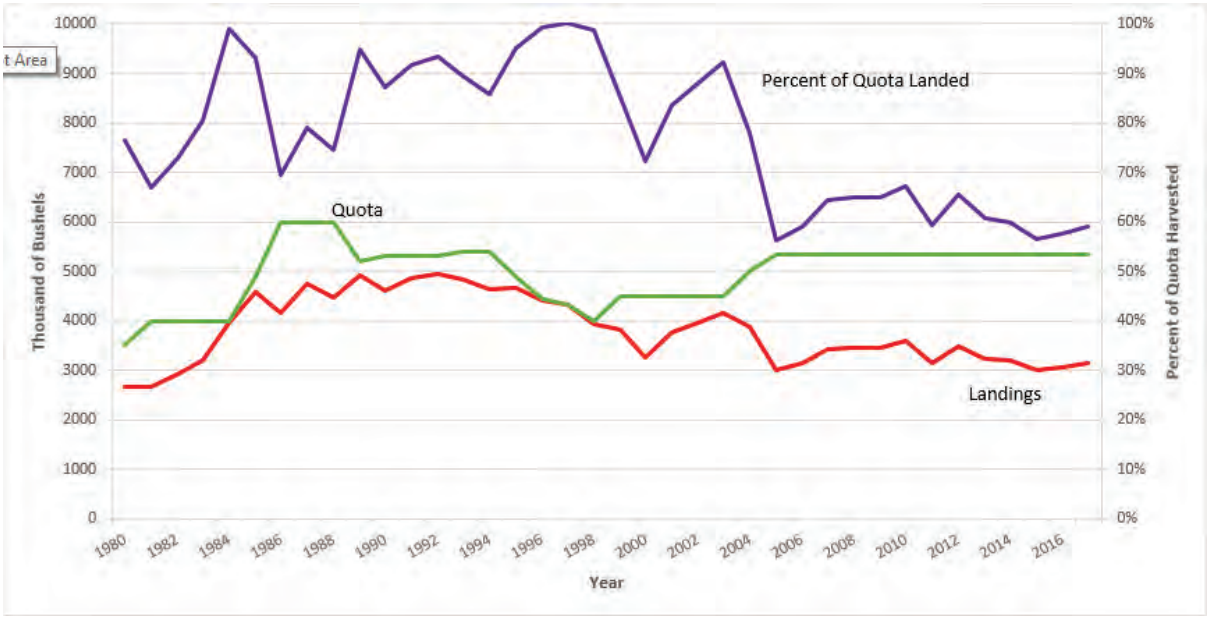

Figure 14. Ocean quahog landings, quotas, and percent of quotas landed, 1980-2017.
Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

Ex-vessel Revenues and Prices

Figures 15 to 18 show ex-vessel revenues and prices for surfclams and ocean quahogs in nominal and real values. As previously indicated (see Trends in Consolidation Section), a series of conditions resulted in a substantial portion of the industrial fleet leaving the clam fishery in 2005; in addition, increasing foreign competition and limited markets have resulted in decrease in landings (see Landings, Quota Utilization, and Market Trends Section). However, nominal ex-vessel prices remained relative stable during that last 10-15 years (Figures 17 and 18).

After the large surfclam ex-vessel revenue decrease in 2005, ex-vessel revenues increased to the 2003 levels, and then have a decreasing trend through 2010 (Figure 15). From 2010 through 2017, surfclam ex-vessel revenues have shown a slight upward trend despite low quota utilization (Figure 13) and significant decrease in the efficiency of harvesting operations (Figure 19). Ex-vessel prices for surfclam have been relatively stable for the 2010 through 2017 period with slight increases in more recent years (Figure 17).

Ex-vessel price for both species were relatively flat for the 2003 to 2007 period. In 2008, there was a slight increase in the price for both species that is likely related to the large increase in fuel costs in 2008, processors reported levying fuel surcharges on their customers for at least some period of time to cover increased harvesting costs. Ex-vessel price for both species show a steady upward trend from 2009-2017 (Figures 17 and 18).

However, Figures 17 and 18, show that the mean real price (adjusted prices) for both species have shown a downward trend for the 2003-2017 time period. While these trends by themselves yield no real answers about market power, taken together with increasing production prices, they do suggest that vessels were likely not improving their economic position.

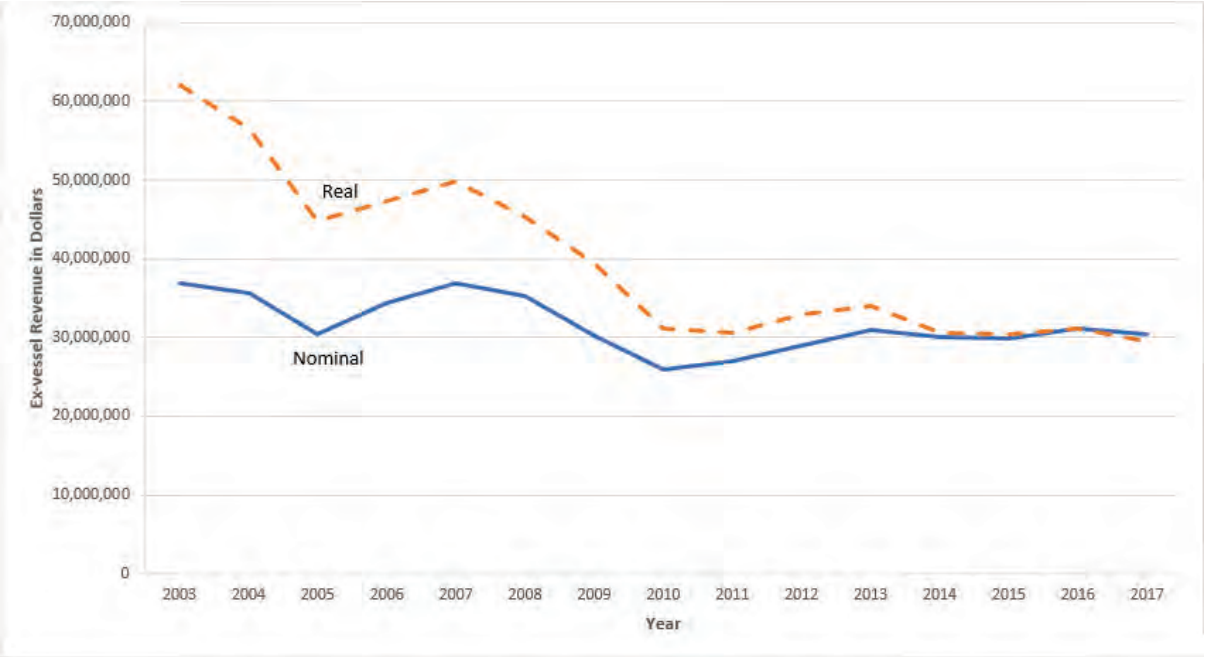

Figure 15. Surfclam ex-vessel revenue, 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

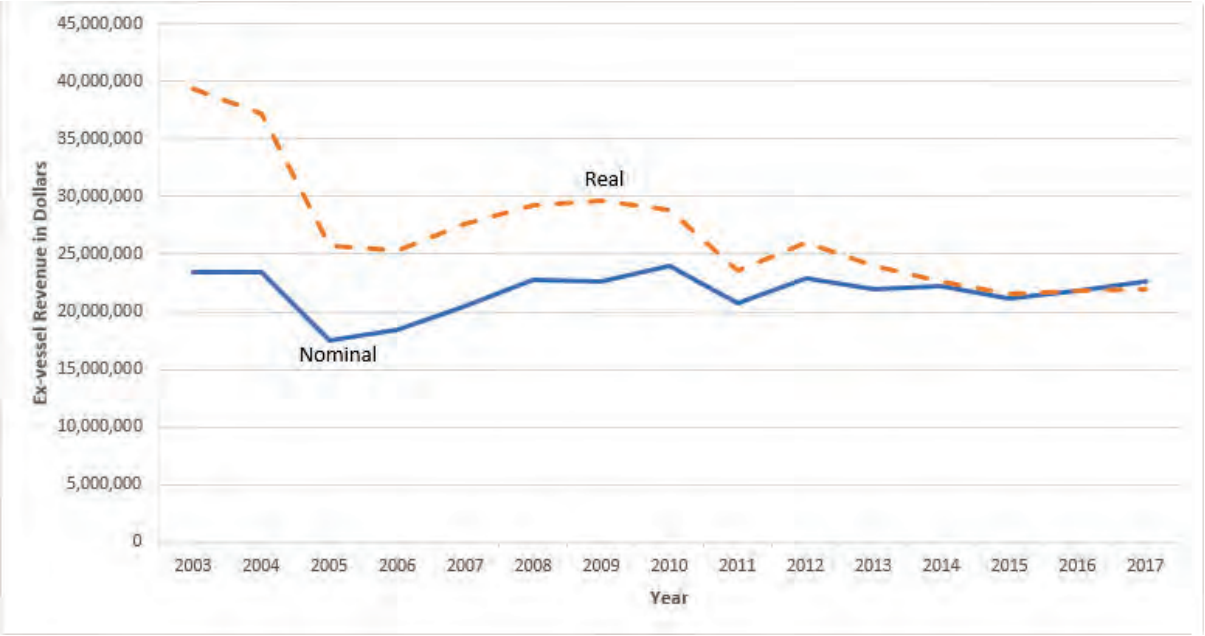

Figure 16. Ocean Quahog ex-vessel revenue, 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

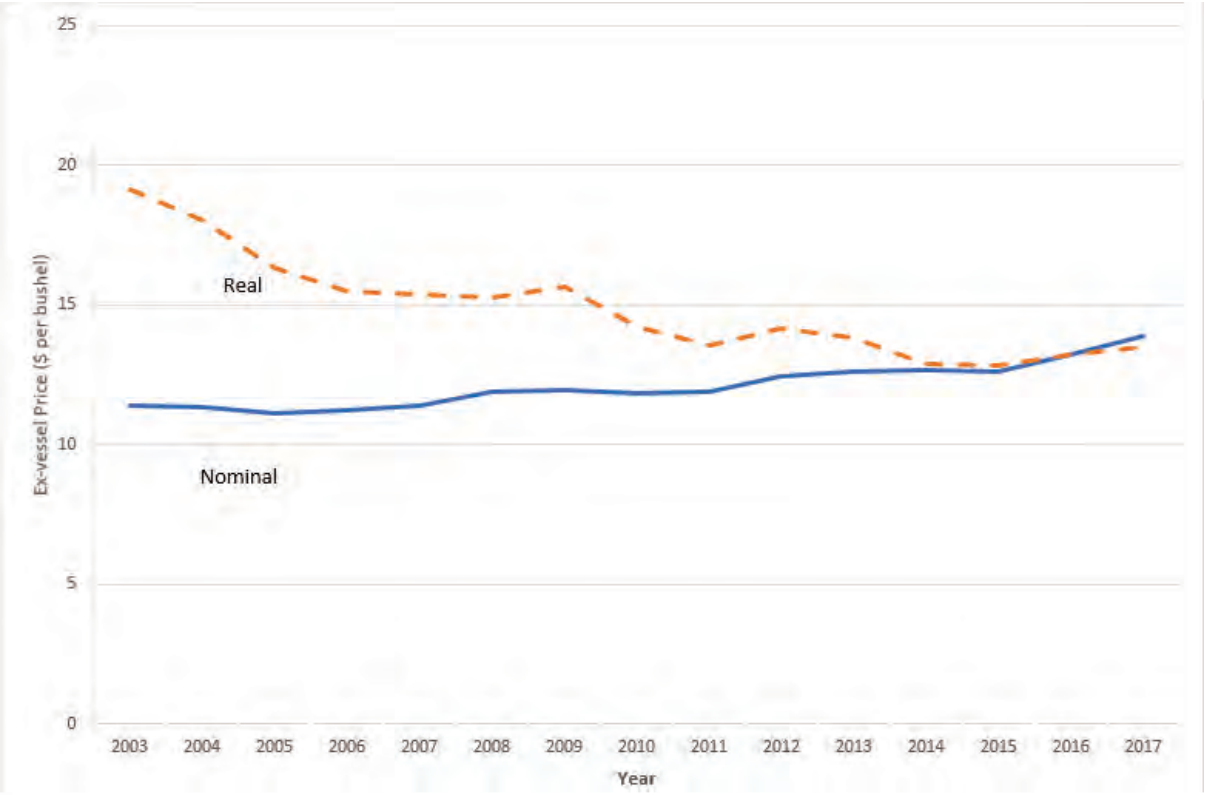

Figure 17. Surfclam ex-vessel price ($/bu), 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

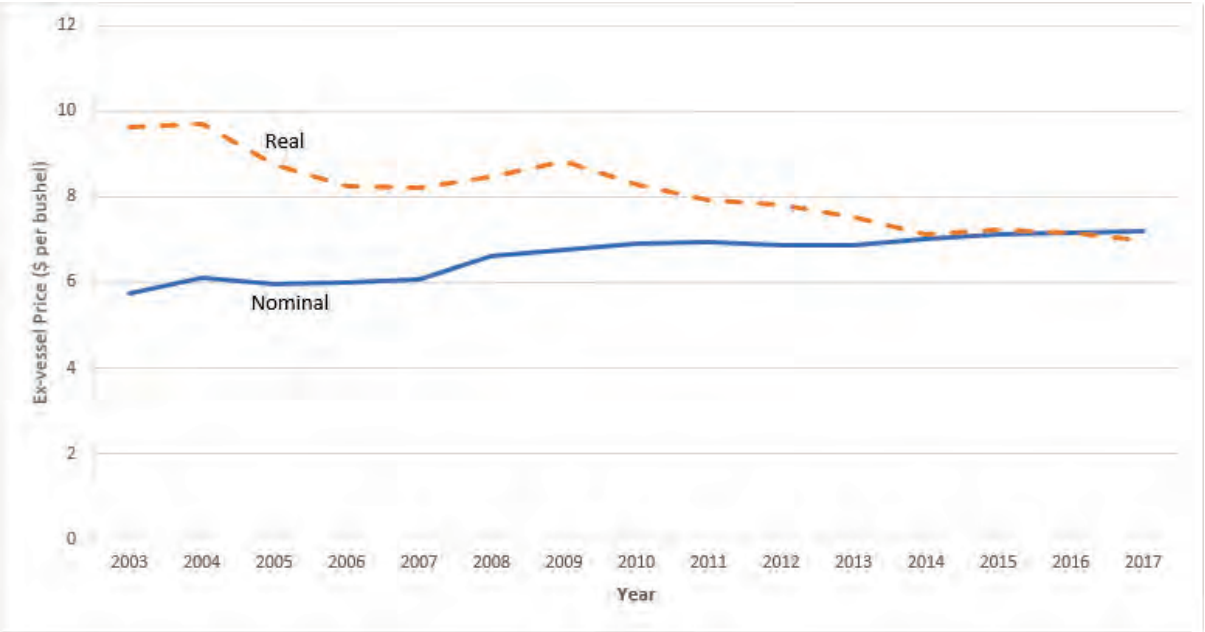

Figure 18. Ocean quahog ex-vessel price ($/bu), 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

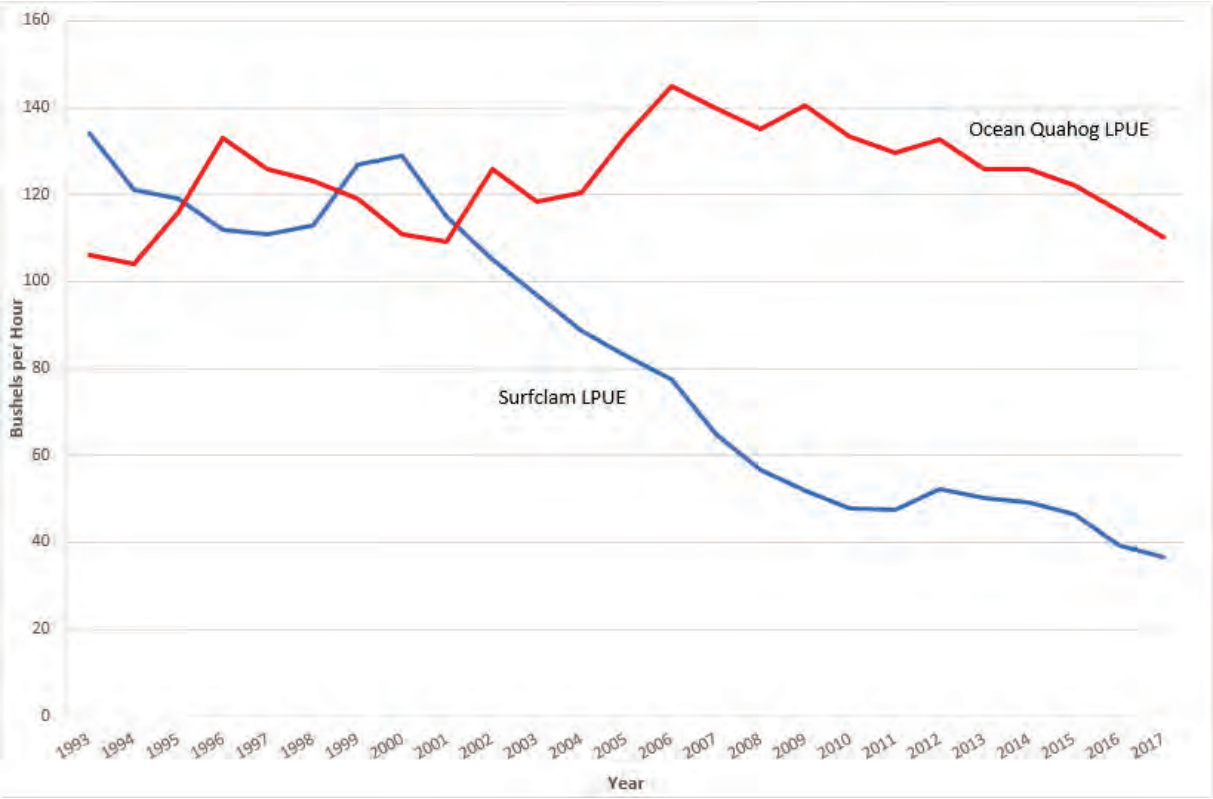

Figure 19. Surfclam and ocean quahog landings per unit effort (LPUE), 1993-2017.
Source: NMFS Clam Vessel Logbook Reports.

Economic Performance - Harvesting Sector

Prior to the implementation of the ITQ program, excess harvesting capacity (overcapitalization) was a major problem and led to closures very quickly due to effort/time restrictions. In fact, the excess capacity was such, that it was believed that an increase in the annual quota within the range that at that time constituted optimum yield would have not alleviated this problem but could have further encouraged the existing vessels to increase vessel capacity through gear modifications (MAFMC 1988).

Given the large economic inefficiencies resulting from the overcapitalization of the fleet, the harvesting, and processing industries which depend upon them, were only marginally profitable. Furthermore, during the pre-ITQ period, the composition of the entire fleet shifted to larger vessels (MAFMC 1988). Larger vessels harvest more output per unit of input (on site). However, under effort management restrictions that constrained the time that vessels could fish for surfclams, both, small and large vessels harvested similar quantities of surfclams. As such, overall, larger vessels employed more fuel, labor, and capital services per unit of output when compared to smaller vessels. The benefit of larger unit output per unit of allocated inputs once the vessel has reached a fishing site were not realized under effort time/time restrictions (Weninger and Strand 2003).

In theory, an important benefit of ITQ systems are efficiency gains that may result from the implementation of property rights. Walden et al. (2012) pointed out that under an ITQ system,

vessels with the lowest harvesting costs can expand their catch by buying or leasing quota share from other, higher-cost vessels, leading to lower overall harvest costs and more efficient outcomes for society.

Theoretically, under the ITQ system, each harvester is able to use the lowest cost combination of fishing inputs (e.g., fuel, labor, materials) since they are allocated an exclusive share of the annual quota. In other words, they are incentivized to harvest the resource in a manner that is most efficient, and therefore, maximizing profits for their fishing operations as well as the industry as a whole.

Productivity is a key economic indicator at the household, firm, industry and national levels, and is a critical factor in economic growth (Färe, Grosskopf, and Margaritis 2008 cited in (Walden et al. 2014)). A productivity index can be used to measure the combined effects of changes in inputs and outputs in a fishery. More specifically, a productivity index can be used to describe how landings from fishing vessels and input to produce those landings change through time. This indicator is of importance, because changes in productivity are directly tied to changes in profit. As an example, if prices for the clams landed are stable, and the inputs (such as fuel used on a fishing trip) do not change, profits can increase if vessels are able to produce more landings (outputs) for a given level of inputs.

Productivity changes in the Atlantic surfclam and ocean quahog ITQ fisheries have been conducted by various researchers. Walden et al. (2014) conducted an evaluation of productivity change for all catch share fishery programs in the U.S. and Thunberg et al. (2015) measured changes in multi-factor productivity in U.S catch share fisheries. Multi-factor productivity (MFP) change is a measure of changes in quantities of inputs used to harvest fish and outputs produced. Changes in the MFP can be used to capture multiple dimensions of economic change associated with catch share programs (e.g., changes in product value and mix, costs and efficiency) in a single metric through time.

MFP may improve either by harvesting more fish with the same amount of inputs or by harvesting the same amount of fish using fewer inputs. It is expected that by ending the “race to fish” catch share programs may lead to improved productivity through the ability to better plan harvesting activities to change the mix of outputs and/or make better use of capital and other inputs. Furthermore, productivity gains may also be obtained through the transfer of quota from less to more efficient vessels (Walden et al. 2012).

Since changing resource conditions can influence output, the values reported by Walden et al. (2014) and Thunberg et al. (2015) were adjusted using a Lowe index to account for changes in biomass to estimate MFP. For a detailed treatment of methods and data see Walden et al. (2014) and Thunberg et al. (2015).

Walden et al. (2014) concluded that over the long-term, the biomass adjusted MFP (MFP is defined as a ratio of aggregate outputs to aggregate inputs) has remained above the pre-ITQ period baseline (1987-1989) in the surfclam fishery from 1990 through 2012 (the last year evaluated in the analysis). On a yearly basis, the biomass-adjusted productivity increased until 2003, then declined during the last eight years of the time period (Figure 20). Beginning in year 2000, the input index

started to increase, indicating that more inputs were being used to harvest the quota. This outcome is consistent with a declining biomass. When the stock declines and becomes more dispersed spatially, vessels will need to employ more inputs to harvest the same amount of output.

For ocean quahogs, the adjusted multi-factor productivity was above the pre-ITQ baseline for 19 of 23 years (Walden et al. 2014). The value of 1.82 in year 2012 indicates that the fishery was 82% more productive in 2012 than in the base line period. Most of the years showed slight increases or decreases in yearly productivity (Figure 20). The largest increase was in 21% in 2005 (1.21; year-to-year MFP change), while the largest decline was 13% in 2000 (0.87). For the entire period, the average year-to-years change was thee percent (1.03).

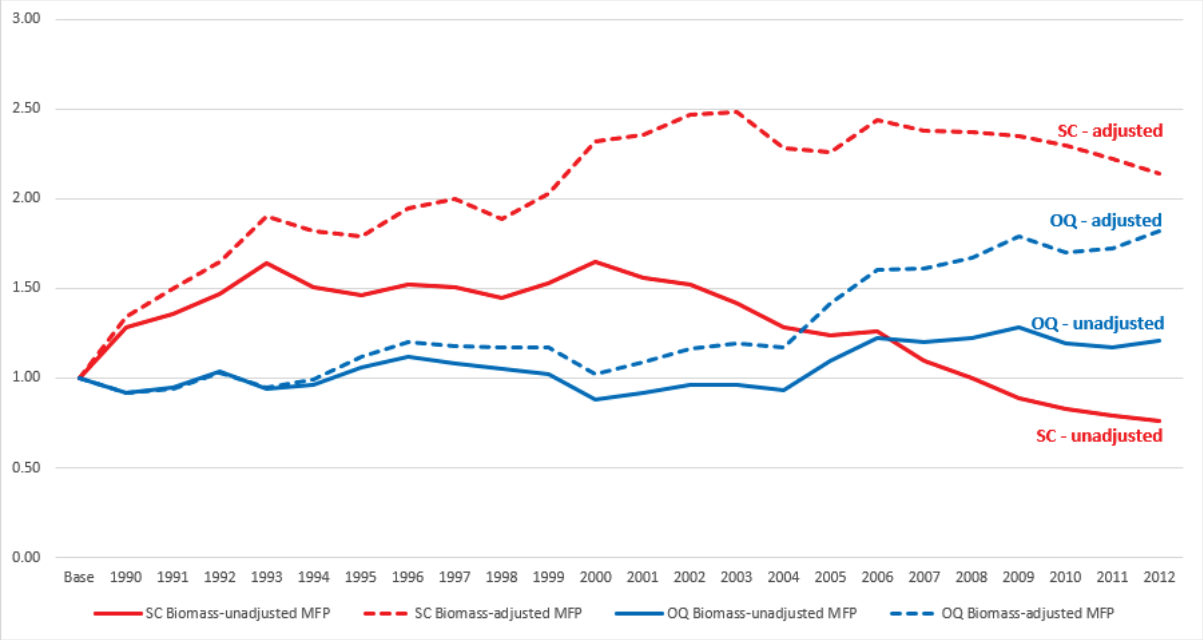

Figure 20. Biomass-adjusted and biomass-unadjusted marginal factor productivity for surfclam and ocean quahog, base period (1987-1989) and 1990-2012.

Brinson and Thunberg (2016) employed the Gini coefficient to measure changes in the distribution of the use of quota in terms of catch share revenue among active vessels for several catch share programs. These authors indicated that the trends in the Gini coefficient over time and not the absolute value are important in assessing evenness or equality. A Gini coefficient of 0 means that catch share revenues are the same for all active vessels, while a value approaching 1 means that catch shares revenues are highly concentrated in a single or among a small number of vessels. A decreasing Gini coefficient is indicative of increasing evenness or equality in catch share revenues, whereas an increasing Gini coefficient indicates decreasing evenness, or its opposite increasing inequality among participating vessels.

The Gini coefficient for surfclam during the first year of the ITQ program implementation was 0.37 (1990), a 16% increase from the 1987-1990 baseline period (0.32). The Gini coefficient has been steadily increasing since the surfclam ITQ system was implemented and reached a value of 0.50 in 2013 (the last year evaluated by the authors). For ocean quahogs, the Gini coefficient was 0.51 during the baseline period and it decreased to 0.48 during the first year of the ITQ program

implementation, and then steadily increased to 0.61 for most of the early 1990s to early 2000s. In 2013, the Gini coefficient for the ocean quahog fishery was 0.59 (Table 15). The overall performance analysis (assessing set of all indicators developed) for 16 catch share programs evaluated by Brinson and Thunberg (2016) indicated that in general terms the accumulation of ownership share may be less of a concern than consolidation in the use of quota, which includes the use of quota by entities as well any quota lease from other share owners.

Table 15. The Gini coefficient for the surfclam and ocean quahog catch share programs.

Catch Share Program	Baseline period (average 1987-1989)	Year 1	Average years 1-3	Average years 1-5	Last 5 year average	2013
Surfclam	0.32	0.37	0.45	0.46	0.49	0.50
Ocean Quahog	0.51	0.48	0.61	0.61	0.61	0.59

Source: Brinson and Thunberg (2016).

ITQ Program Review

The Council contracted Northern Economics, Inc. to develop a report for the review of the Atlantic surfclam and ocean quahog ITQ program. NOAA Catch Share Policy prepared in 2010 indicates that periodic reviews are expected of all catch share programs (CSPs), regardless of whether the program is a LAPP or when it was put in place. The review conducted by Northern Economics, Inc. fulfilled the program review requirements as described in the guidance for catch share reviews (NMFS 2017b). The review was completed and submitted to NMFS in June 2019 following a public comment period.

7.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This Environmental Assessment (EA) analyzes the expected impacts of each alternative on each VEC. When considering impacts on each VEC, the alternatives are compared to the current condition of the VEC. The alternatives are also compared to each other. The No Action alternatives describe what would happen if no action were taken. For all options considered in this document, the "no action" alternative would have the same outcomes as *status quo* management, therefore, these alternatives are at times described as "no action/*status quo*."

Environmental impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). Table 16 summarizes the guidelines used for each VEC to determine the magnitude and direction of the impacts described in this section.

The recent conditions of the VECs include the biological conditions of the target stocks, non-target stocks, and protected species over the most recent five years (sections 6.1 and 6.3). They also include the fishing practices and levels of effort and landings in the surfclam and ocean quahog fisheries over the most recent five years, as well as the economic characteristics of the fisheries over the most recent three to five years (depending on the dataset; section 6.4). The recent conditions of the VECs also include recent levels of habitat availability and quality (section 6.2). The current condition of each VEC is described in Table 17.

This EA analyzes the impacts of the alternatives described fully under section 5.0. For ease reference, those alternatives are listed here.

Excessive Share Alternatives

- Alternative 1: No Action/*Status Quo* (No limit or definition of an excessive share is included in the FMP)
- Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)
  - Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 2.2: Quota share cap at 49%
  - Sub-Alternative 2.3: Quota share cap at 95%
- Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)
  - Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 3.2: Combined cap at 40%
  - Sub-Alternative 3.3: Combined cap at 49%
- Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)
  - Sub-Alternative 4.1: Two-part cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation
  - Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%

- Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota
- Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Excessive Shares Review Alternatives

- Alternative 1: No Action/*Status Quo* (There are no requirements for review of implemented excessive shares measures)
- Alternative 2: Require periodic review of excessive shares measures that the Council adopts at specific intervals. At least every 10 years or as needed

Framework Adjustment Process Alternatives

- Alternative 1: No Action/*Status Quo* (No changes to the current list of measures that can be addressed under the framework adjustment process)
- Alternative 2: Add excessive shares cap levels to the list of measures to be adjusted via framework

Multi-Year Management Measures Alternatives

- Alternative 1: No Action/*Status Quo* (No changes to the process to set surfclam and ocean quahog management specifications for up to 3 years)
- Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule

The alternatives are not compared to a theoretical condition where the fisheries are not operating. These fisheries have occurred for many decades and are expected to continue into the foreseeable future. The nature and extent of the management programs for these fisheries have been examined in detail in EAs and Environmental Impact Statements (EISs) prepared for previously implemented management actions under the Atlantic Surfclam and Ocean Quahog FMP.

When considering overall impacts on each VEC, both surfclam and ocean quahog commercial fisheries are considered. This action does not propose any modifications to other management components (e.g., annual quota, minimum size, reporting requirements) and as such are not expected to affect the commercial fisheries in a manner that would change the impacts for any of the VECs considered.

In general, alternatives which may result in overfishing or an overfished status for target and non-target species may have negative biological impacts for those species, compared to the current condition of the VEC. Conversely, alternatives which may result in a decrease in fishing effort, resulting in ending overfishing or rebuilding to the biomass target, may result in positive impacts for those species by resulting in a decrease in fishing mortality (Table 16).

For the physical environment and habitat, alternatives that improve the quality or quantity of habitat or allow for recovery are expected to have positive impacts. Alternatives that degrade the quality or quantity, or increase disturbance of habitat are expected to have negative impacts (Table 16). In addition, alternatives that result in continued fishing effort may limit the recovery potential of some currently degraded areas and therefore result in slight negative impacts. The commercial

fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. The effects of clam dredges are short term and minimal because the fisheries occur in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats (section 6.2.3). Even in areas where habitat may be impacted by commercial gear or vessels, these areas are typically commonly fished by many vessels over many decades and are unlikely to see a measurable improvement in their condition in response to minor changes in measures or short-term changes in effort in an individual commercial fishery.

For protected species, consideration is given to both ESA-listed species and MMPA-protected species. ESA-listed species include populations of fish, marine mammals, or turtles at risk of extinction (endangered) or endangerment (threatened). For endangered or threatened species, any action that results in interactions with or take of those species or stocks is expected to have negative impacts, including actions that reduce interactions. Actions expected to result in positive impacts on ESA-listed species include only those that contain specific measures to ensure no interactions with protected species (i.e., no take). By definition, all species listed under the ESA are in poor condition and any take has the potential to negatively impact that species' recovery.

Under the MMPA, the stock condition of each protected species varies, but all are in need of protection. For marine mammal stocks/species that have their PBR level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 16). The impacts of each alternative on the protected resources VEC take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have exceeded or are in danger of exceeding their PBR level.

Socioeconomic impacts are considered in relation to potential changes in landings and prices, and by extension, revenues, compared the current fisheries conditions. Alternatives which could result in an increase in landings are generally considered to have positive socioeconomic impacts because they could result in increased revenues; however, if an increase in landings leads to a decrease in price or a decrease in SSB for any of the landed species, then negative socioeconomic impacts could occur. In addition, measures that would curtail entities from exerting market power and therefore not decreasing competition would have positive socioeconomic impacts. Lastly, measures that would result in community disruptions as result of additional consolidation (e.g., decrease in the number of independent harvesters, decrease in employment) would have negative socioeconomic impacts.

Excessive consolidation, in an economic context, is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse

population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

Expected Changes in Fishing Effort Under Alternatives Considered

The expected impacts to each VEC are derived from both consideration of the current condition of the VEC and the expected changes in fishing effort under each of the alternatives. It is not possible to quantify with confidence how effort will change under each alternative; therefore, expected changes are typically described qualitatively. However, the excessive shares alternatives presented in this document or the other alternatives analyzed (i.e., cap review; framework adjustment process; and multi-year management measures) are purely administrative and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted.

Table 16. General definitions for impacts and qualifiers relative to resource condition (i.e., baselines) summarized in Table 17 below.

General Definitions				
VEC	**Resource Condition**	**Impact of Action**		
		Positive (+)	Negative (-)	No Impact (0)
Target and non-target Species	Overfished status defined by the MSA	Alternatives that maintain or are projected to result in a stock status above an overfished condition*	Alternatives that maintain or are projected to result in a stock status below an overfished condition*	Alternatives that do not impact stock / populations
ESA-listed protected species (endangered or threatened)	Populations at risk of extinction (endangered) or endangerment (threatened)	Alternatives that contain specific measures to ensure no interactions with protected species (i.e., no take)	Alternatives that result in interactions/take of listed species, including actions that reduce interactions	Alternatives that do not impact ESA-listed species
MMPA protected species (not also ESA-listed)	Stock health may vary but populations remain impacted	Alternatives that maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammals that could result in takes above PBR	Alternatives that do not impact MMPA protected species
Physical environment / habitat / EFH	Many habitats degraded from historical effort and slow recovery time (see condition of the resources table)	Alternatives that improve the quality or quantity of habitat or allow for recovery	Alternatives that degrade the quality/quantity or increase disturbance of habitat	Alternatives that do not impact habitat quality
Human communities (socioeconomic)	Highly variable but generally stable in recent years (see condition of the resources table for details)	Alternatives that increase revenue and social well-being of fishermen and/or communities	Alternatives that decrease revenue and social well-being of fishermen and/or communities	Alternatives that do not impact revenue and social well-being of fishermen and/or communities
Impact Qualifiers				
A range of impact qualifiers is used to indicate any existing uncertainty	Negligible	To such a small degree to be indistinguishable from no impact		
	Slight (sl), as in slight positive or slight negative	To a lesser degree / minor		
	Moderate (M) positive or negative	To an average degree (i.e., more than "slight", but not "high")		
	High (H), as in high positive or high negative	To a substantial degree (not significant unless stated)		
	Significant (in the case of an EIS)	Affecting the resource condition to a great degree, see 40 CFR §1508.27.		
	Likely	Some degree of uncertainty associated with the impact		

*Actions that will substantially increase or decrease stock size, but do not change a stock status may have different impacts depending on the particular action and stock. Meaningful differences between alternatives may be illustrated by using another resource attribute aside from the MSA status, but this must be justified within the impact analysis.

Table 17. Baseline conditions of VECs considered in this action, as summarized in section 6.

VEC		Baseline Condition	
		Status/Trends, Overfishing?	**Status/Trends, Overfished?**
Target stocks (section 6.1.1)	**Atlantic surfclam**	No	No
	Ocean quahog	No	No
Non-target species (principal species listed in section 6.1.2)	**Moon snail**	Unassessed	Unassessed
	Sea scallop	No	No
	Little skate	No	No
	Winter skate	No	No
Habitat (section 6.2)		Commercial fishing impacts are complex and variable and typically adverse; Non-fishing activities had historically negative but site-specific effects on habitat quality.	
Protected resources (section 6.3)	**Sea turtles**	Leatherback and Kemp's ridley sea turtles are classified as endangered under the ESA; loggerhead (NW Atlantic DPS) and green (North Atlantic DPS) sea turtles are classified as threatened.	
	Fish	Atlantic salmon, shortnose sturgeon, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are classified as endangered under the ESA; the Atlantic sturgeon Gulf of Maine DPS is listed as threatened; cusk, alewife, and blueback herring are candidate species	
	Large whales	All large whales in the Northwest Atlantic are protected under the MMPA. North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. Pursuant to section 118 of the MMPA, the Large Whale Take Reduction Plan was implemented to reduce humpback, North Atlantic right, and fin whale entanglement in vertical lines associated with fixed fishing gear (sink gillnet and trap/pot) and sinking groundlines.	
	Small cetaceans	Pilot whales, dolphins, and harbor porpoise are all protected under the MMPA. Pursuant to section 118 of the MMPA, the Harbor Porpoise Take Reduction Plan and Bottlenose Take Reduction Plan was implemented to reduce bycatch of harbor porpoise and bottlenose dolphin stocks, respectively, in gillnet gear.	
	Pinnipeds	Gray, harbor, hooded, and harp seals are protected under the MMPA.	
Human communities (section 6.4)		Surfclam and ocean quahog stocks support substantial industrial fisheries and related support services. 2017 estimated ex-vessel revenues were $31 and $23 million for surfclams and ocean quahogs respectively. Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine. The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products. In 2017, there were 67 surfclam and 37 ocean quahog allocations owners at the beginning of the fishing year. A total of 48 vessels were active in these fisheries in 2017, including a handful of independent vessels (less than 5).	

7.1 Impacts on Atlantic Surfclam and Ocean Quahog (Managed Species) and Non-Target Species

7.1.1 Excessive Shares Alternatives

Under alternative 1 (no action/*status quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. This alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0). The no action alternative is expected to have no impact on the prosecution of these clam fisheries, including landings levels, fishery distribution, or fishing methods and practices. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species). Alternative 1 is expected to have the same impacts (no impacts) on target species as alternatives 2-6 described below.

The no action alternative is not expected to impact non-target species caught in the surfclam and ocean quahog commercial fisheries. All of the species most commonly caught on directed clam trips have positive stock status, except for moon snails which are unassessed. As indicated above, the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices are not expected to change under this alternative. Therefore, the no action alternative is expected to have no impact on interaction of these fisheries with non-targeted species. Alternative 1 is expected to have the same impacts (no impacts) on non-target species as alternatives 2-6 described below.

Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. These alternatives are expected to have no impact on the prosecution of these surfclam and ocean quahog fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Alternatives 2-6 are expected to have no impacts (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Relative to each other, and alternative 1 (no action), alternatives 2-6 would have no impacts on both target species, and non-target species.

7.1.2 Excessive Shares Review Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

7.1.3 Framework Adjustment Process Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), the list of management measures that have been identified in the FMP that could be addressed via framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

7.1.4 Multi-Year Management Measures Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for

up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fisheries resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

Although there are no impacts on the VECs, alternative 2 would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

7.2 Impacts on the Physical Habitat and EFH

As described in section 7.0, the commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. The effects of clam dredges are short term and minimal because the fisheries occur in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats. As described in section 7.1, the alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

7.2.1 Excessive Shares Alternatives

Under alternative 1 (no action/*status quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts (no impacts) on habitat, including EFH as alternatives 2-6 described below.

Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. Alternatives 2-6 are expected to have no impacts (direct or indirect) on habitat, including EFH. Relative to each other, and alternative 1 (no action), alternatives 2-6 would have no impacts on habitat, including EFH.

7.2.2 Excessive Shares Review Alternatives

Under alternative 1 (no action/*status quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.2.3 Framework Adjustment Process Alternatives

Under alternative 1 (no action/s*tatus quo*), the list of management measures that have been identified in the FMP that could be addressed via the framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.2.4 Multi-Year Management Measures Alternatives

Under alternative 1 (no action/s*tatus quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information

regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.3 Impacts on Protected Resources

7.3.1 Excessive Shares Alternatives

Under alternative 1 (no action/s*tatus quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue and therefore, the no action alternative is expected to have no impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Based on this information, and the fact that there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the fisheries, Alternative 1 is not expected to adversely affect any protected species provided in Table 11 (see section 6.3). For these reasons, the no action alternative is expected to have no impact on ESA-listed and/or MMPA-protected resources. Relative to alternatives 2-6, alternative 1 would have no impacts to protected species.

In addition, as described in section 7.1, the actions considered under alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. These alternatives are expected to have no impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Based on this information, and the fact that there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the fisheries, alternatives 2-6 are not expected to adversely affect any protected species provided in Table 11 (see section 6.3). For these reasons, alternatives 2-6 are expected to have no impacts (direct or indirect) on ESA-listed and/or MMPA-protected resources. Relative to each other, and alternative 1, alternatives 2-6 would have no impacts on protected species.

7.3.2 Excessive Shares Review Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations of the excessive shares review alternatives on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/s*tatus quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct

or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.3.3 Framework Adjustment Process Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations of the framework adjustment process alternatives on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/s*tatus quo*), the list of management measures that have been identified in the FMP that could be addressed via the framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of management measures that have been identified in the FMP that can be implemented or adjusted at any time during the year. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.3.4 Multi-Year Management Measures Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/s*tatus quo*), the current management approach addressing surfclam and ocean quahog multi-year management specifications would continue. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.4 Impacts to Communities (Socioeconomic Impacts)

7.4.1 Excessive Shares Alternatives

Under alternative 1 (no action/s*tatus quo*), no limit or definition of excessive shares accumulation is included in the FMP. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. Under this alternative, the current management approach to address excessive shares would continue.

Amendment 8 to the FMP states that it relies on antitrust laws already in force which would cover the abuse of excessive shares (MAFMC 1988). The Council's intent under Amendment 8 was to have NMFS monitor the concentration of ITQ (as ITQ owners have to apply to NMFS to transfer ITQ) and if it seemed that excessive consolidation was occurring, they would advise the U.S. DOJ which would determine if antitrust laws were being violated (Joel McDonald Personal Communication, July 16, 2017). However, this monitoring of quota shares could not occur. This is because the creation of new business entities (e.g., LLC's, etc.) with ITQ ownership, and the lack of a regulatory mechanism to identify corporate officers or business partnerships across individuals or entities involved in ITQ ownership hampered the ability to determine whether there was a concentration of quota ownership, and whether competitive conditions were being eroded in the quota share market over time.

During the development of alternatives for this amendment, staff at the Council and GARFO (including General Council) spoke to the Antitrust Division of the DOJ about the role that they might play in the monitoring of excessive shares in the Atlantic surfclam and ocean quahog fisheries. The DOJ indicated that their Business Practice Process does provide a pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for

which the Business Review Process[43] has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment.[44]

Therefore, this alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0), and a means to track and monitor ownership relative to that definition is needed.

As previously described in section 6.4.5, the Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries. The qualitative evidence reviewed in the Compass Lexecon Report indicates that is unlikely that market power is being exerted in the product market (monopoly/oligopoly) in these fisheries.

In addition, it is argued that the availability of substitutes is the most important of the factors listed in determining the elasticity of demand[45] for a specific commodity (Leftwich 1973; Awk 1988). Seafood demand in general appears to be elastic (NMFS 2007). In fact, for most species, product groups, and product forms, demand is elastic (Asche and Bjørndal 2003). There are many substitutes for most fish products, including other types of fish and sources of protein from other animals (NMFS 2007). When demand is highly elastic, and substitutes are amply available, small changes in price lead to large changes in the quantity demanded. The large reductions in output caused by price increases generally limit the potential for the significant exercise of market power (because moving the market price substantially requires withholding, without revenue, a large quantity).

While current levels of share consolidation do not appear to result in market power in the product market (monopoly/oligopoly), it could create market power in the input market (monopsony/oligopsony) for the fishery resource, or the quota share market. In fact, the CIE review of the Compass Lexecon Report indicated that more attention should be paid to the *monopsony* problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[46] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry with a small number processors and vessels predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern that monopolization in the output market (Walden 2011).

Monopsony power could be exercised by processors over harvesters by reducing their demand for harvesting services, lowering the market price of harvesting services and increasing profits to the processing sector. However, if a processor owns a harvester, that firm would not benefit by

[43] For a detailed description of the Business Review process of the DOJ see: https://www.justice.gov/atr/business-reviews

[44] Sarah Heil, letter to Chis Moore, PhD, June 1, 2018.

[45] Price elasticity of demand is a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price when nothing but the price changes.

[46] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

underutilizing its own harvesting assets in order to depress the price of harvesting services. The processor will be motivated to use its own harvesting capacity when the incremental value of the harvest to the processor exceeds the incremental cost of harvesting, without regard for the effect of the additional harvesting on the market price of harvesting services. As a result, vertically integrated processors will increase harvest levels over those non-vertically integrated processors would choose were they to have influence over the market price of harvesting services (Mitchell et al. 2011). Lastly, from a social perspective, concentration of ownership and control could affect the social and community structure and participation in these fisheries. For example, from a social perspective, it is possible that under additional vertical integration the number of vessels participating in the fisheries could decerase further. Vertically integrated companies could choose to retire older less efficient vessels (for larger, newer, more efficient ones). In addition, there could be further departure of the few independent harvesters still participating in the fisheries. Vertical integration allows individual processors to exert control from the time a clam is harvested from the sea bed to the sale and transport of the final clam products from their facilities.

The no action alternative is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, under alternative 1, there would be no limit or definition of excessive shares accumulation included in the FMP. As such, it could potentially lead to one entity holding 100% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Alternative 1 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions. Alternative 1 could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.

Under alternative 2, a single cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags)[47] throughout the year.[48] Because alternative 2 is based on ownership-only values, none of the sub-alternatives discussed below account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. Participants in these fisheries have reported that they are various types of transactions involving ITQs that commonly occur, including temporary and permanent ITQ transfers, long-term ITQ leases (e.g., five years or more) and transfers of bushel tags from bank lenders and between related and unrelated business entities.

This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

Under Sub-Alternative 2.1, the single quota share caps would be based on the highest level of quota share held by any individual or entity reported in the ownership data for each fishery (i.e.,

[47] There would be no limit of how much annual allocation (cage tags) an individual or entity could use or transfer during the fishing year.
[48] All excessive share alternatives are applicable throughout the year.

surfclams and ocean quahogs) for the 2016-2017 period.[49] The single caps under this alternative would depend on the determination of ownership quota shares levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

The highest level of quota share held (owned) by any individual or entity for surfclam was 28% under both the net actual percentage model and cumulative percentage model regardless of affiliation levels analyzed (Table 2). For example, when you consider results for the cumulative 100% model at the individual/business affiliation level, the highest level of quota share held by a single individual/business was 28% in each 2016 and 2017. This means that a single individual or business held (owned) 28% of the total surfclam ITQ allocation during 2016-2017. This level of ownership does not change when the family level affiliation is considered because that individual/business with the highest holdings did not report family members holding additional allocations. Similarly, the 28% quota share value did not change when the corporate officer level affiliation was considered, as that individual/business did not report any officer(s) in their company that have other interests in other companies that also hold surfclam quota shares. However, those levels do vary across affiliation levels for other individual entities that occur below the cap. Only maximum values are shown in that Table 2. The highest level of quota share held (owned) by any individual or entity for ocean quahogs was 22% under both the net actual percentage model and cumulative percentage model regardless of affiliation levels analyzed for the same reasons identified above for surfclams (Table 3).

As indicated above, the highest level of quota share held by any individual or entity during the 2016-2017 period was 28% for surfclams and 22% for ocean quahogs (Tables 2 and 3). If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in the fishery (i.e., four large entities at 28%, 28%, 28%, and 16%). This implies at least four entities holding surfclam quota, which may provide some protection against predation or foreclosure of competitors. If fully consolidated , a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in the fishery (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%).[50] This implies at least five entities holding ocean quahog quota, which may provide some protection against predation or foreclosure of competitors. As previously indicated, "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails" (Walden 2011). However, as indicated in section 5.0, it is also possible that under all alternatives evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

[49] On average, for the 2016-2017 period, 67% of the surfclam quota and 58% of the ocean quahog quota were landed (Table 4).

[50] The resulting number of minimum entities under excessive shares alternatives 2 through 4 assume that market demand equals supply. When this is not the case, the leasing market could be disrupted (because available quota is larger than product demand) which could result in smaller firms or entities not associated with a processor be driven out of business.

The number of entities above and below specific maximum cap values for the various alternatives and sub-alternatives discussed in section 7 are presented in Tables 18-21.[51] If the surfclam and ocean quahog cap levels described above (28% and 22%, respectively) had been implemented in 2017, all entities would have fallen at or below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.1 in the surfclam or ocean quahog fisheries.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This sub-alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. Therefore, while sub-alternative 2.1 would establish a relatively low single cap quota share ownership of 28% that limits the exercise of market power through capping ownership levels for surfclams, it does not address the creation or exercise of market power through contractual control of quota.

Sub-alternative 2.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

[51] See Box 7.4 for a brief description of common terminology and definitions used in Tables 18-21.

Box 7.4. Terminology associated with the models and affiliation levels presented in Tables 18 to 21.	
Models	
Net Actual Percentage Model	Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.
Cumulative 100% Model	Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.
Affiliation Levels	
Individual/Business Level	Smallest unit at the individual level or business (if an individual owner cannot be identified).
Family Level	Includes any family associations that are not already accounted at the individual or business level.
Corporate Officer Level	Includes association through corporate officer's that are not accounted for in the other levels.
PCT	Percentage
sm, lg	Small, Large

Under Sub-Alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.2 in the surfclam or ocean quahog fisheries.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This sub-alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. Therefore, while sub-alternative 2.2 would establish a single cap quota share ownership of 49% that limits the exercise of market power

through capping ownership levels for surfclams, it does not address the creation or exercise of market power through contractual control of quota.

Sub-alternative 2.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under Sub-Alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%; Table 18).

If the surfclam and ocean quahog cap levels described above (95% for surfclam and 95% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.3 in the surfclam or ocean quahog fisheries.

It is stated in the Compass Lexecon Report it is possible that under some circumstances an excessive shares cap of 100% may be appropriate. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011). Alternative 2.3 could potentially result in quota accumulation levels that are near identical to those under alternative 1 (*status quo* alternative). If one firm or entity controls 95% of the quota, there would be no market for leasing under the current quota levels for these species, as nearly all the quota would be held by a single entity.

As previously indicated under the *status quo* alternative, while current levels of share consolidation do not appear to result in market power in the product market (monopoly/oligopoly), it could create market power in the input market (monopsony/oligopsony) for the fishery resource, or the quota share market. In fact, the CIE review of the Compass Lexecon Report indicated that more attention should be paid to the *monopsony* problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the

monopoly problem. The condition of TAC not binding and quota prices of zero[52] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry with a small number processors and vessels predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern that monopolization in the output market (Walden 2011).

Monopsony power could be exercised by processors over harvesters by reducing their demand for harvesting services, lowering the market price of harvesting services and increasing profits to the processing sector. However, if a processor owns a harvester, that firm would not benefit by underutilizing its own harvesting assets in order to depress the price of harvesting services. The processor will be motivated to use its own harvesting capacity when the incremental value of the harvest to the processor exceeds the incremental cost of harvesting, without regard for the effect of the additional harvesting on the market price of harvesting services. As a result, vertically integrated processors will increase harvest levels over those non-vertically integrated processors would choose were they to have influence over the market price of harvesting services (Mitchell et al. 2011). Lastly, from a social perspective, concentration of ownership and control could affect the social and community structure and participation in these fisheries.

Sub-alternative 2.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.3 could potentially allow for share concentration levels similar to those under the current conditions and as such, it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Sub-alternative 2.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions. Sub-alternative 2.3 could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.

Comparisons Across Sub-Alternatives 2.1 to 2.3

In this section a comparison between sub-alternatives 2.1 through 2.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 2.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 2.2 and 2.3 as no entity would be above the caps (if they had been implemented in 2017). However, in the long-term, alternative 2.1 would have slight positive socioeconomic impacts compared to sub-alternative 2.2, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. For example, sub-alternative 2.1 could potentially result in a minimum of four (surfclam) to five (ocean quahog) large and efficient companies (e.g., with more than 10% market share), while sub-alternative 2.2 could potentially result in only two large and efficient companies (Table

[52] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

18; if fully consolidated). An excessive-share cap of 28% for surfclams and 22% for ocean quahogs could potentially ensure that there would be at least four to five processors operating at reasonable output levels, respectively. Lastly, sub-alternative 2.1 would have positive socio-economic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation (as sub-alternative 2.3 could potentially result in one large entity controlling 95% of the quota for surfclam and/or ocean quahogs).

Sub-alternative 2.2 would have less positive socioeconomic impacts in the long-term compared to sub-alternatives 2.1, as sub-alternative 2.2 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.2 would have positive socioeconomic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.2 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 2.3 would have negative socioeconomic impacts in the long-term compared to sub-alternatives 2.1 and 2.2, as sub-alternative 2.3 has the potential to provide the smallest degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 2.1 would result in the most positive impacts, sub-alternative 2.2 would result in the second most positive impacts, and sub-alternative 2.3 would result in the least positive impacts.

Table 18. Potential impacts of sub-alternatives 2.1, 2.2, and 2.3 (Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 2.1 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28%		28%		28%		28%		28%		28%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16
Ocean Quahog Values												
Cap value	22%		22%		22%		22%		22%		22%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12
Sub-Alternative 2.2 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); this cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing												
Surfclam Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Sub-Alternative 2.3 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); cap at 95% based on industry representatives indicating that there is no market power (no monopolistic behavior)												
Surfclam Values												
Cap value	95%		95%		95%		95%		95%		95%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5
Ocean Quahog Values												
Cap value	95%		95%		95%		95%		95%		95%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5

Table 19. Potential impacts of sub-alternative 3.1, 3.2, and 3.3 (Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 3.1 - Combined Cap –Combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28%		33%		44%		48%		49%		49%	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	28; 28; 28; 16	3 lg; 1 sm	33; 33; 33; 1	3 lg	44; 44; 12	2 lg; 1 sm	48; 48; 3	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	29%		29%		39%		41%		41%		41%	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	4 lg	29; 29; 29; 13	4 lg	29; 29; 29; 13	3 lg	39, 39, 22	3 lg	41; 41; 18	3 lg	41; 41; 18	3 lg	41; 41; 18
Sub-Alternative 3.2 - Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags); cap at 40% based on recommendations provided in the Compass Lexecon Report												
Surfclam Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	53	0	54	0	54	0	69	1	68	2	67	3
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Ocean Quahog Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	43	0	43	0	43	0	46	1	44	3	43	4
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Sub-Alternative 3.3 - Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags); cap at 49% based on the golden tilefish IFQ cap (i.e., ownership plus leasing)												
Surfclam Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2

Table 20. Potential impacts of sub-alternative 4.1, 4.2, and 4.3 (Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 4.1 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28/28		28/33		28/44		28/48		28/49		28/49	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16
Ocean Quahog Values												
Cap value	22/29		22/29		22/39		22/41		22/41		22/41	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12
Sub-Alternative 4.2 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation												
Surfclam Values												
Cap value	43/43		43/48		43/59		43/63		43/64		43/64	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14
Ocean Quahog Values												
Cap value	37/44		37/44		37/54		37/56		37/56		37/56	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26
Sub-Alternative 4.3 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on ownership quota share at 30% and combined cap at 60%												
Surfclam Values												
Cap value	30/60		30/60		30/60		30/60		30/60		30/60	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10
Ocean Quahog Values												
Cap value	30/60		30/60		30/60		30/60		30/60		30/60	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10

Table 21. Potential impacts of alternative 5 (Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Alternative 6 - Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota												
Surfclam Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Ocean Quahog Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20

Under alternative 3, a combined cap would be implemented – combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Under sub-alternative 3.1, the cap would be based on the highest level of combined cap held by any individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The combined caps under this alternative would depend on the determination of combined levels (quota share ownership plus cage tag leasing) under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

Under sub-alternative 3.1, depending on the affiliate level and model selected, the combined cap for surfclam could be as low as 28% under the net actual percentage model (at the individual/business level) or as high as 49% under the cumulative 100% model (at the corporate officer level; Table 2). Based on these combined cap values, sub-alternative 3.1 could result in a minimum number of large entities (if fully consolidated) in the surfclam fishery ranging from four under the net actual percentage model to two under the cumulative 100% model (Table 19). Under this alternative, depending on the affiliate level and model selected, the combined cap for ocean quahogs could be as low as 29% under the net actual percentage model (at the individual/business level) or as high as 41% under the cumulative 100% model (at the corporate officer level; Table 3). For ocean quahogs, this sub-alternative could result in a minimum number of large entities (if fully consolidated) ranging from four under the net actual percentage model to three under the cumulative 100% model (Table 19).

If the surfclam and ocean quahog combined cap levels described above had been implemented in 2017, all entities would have fallen below those combined caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the combined cap levels under sub-alternative 3.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. Sub-alternative 3.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, some of the potential lower combined cap values under this sub-alternative (e.g., 28%

under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.

Since this sub-alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those combined caps under the net actual percentage model for both surfclams and ocean quahogs. However, under the cumulative 100% model, between one (1% of all entities) and three (4% of all entities) surfclam entities and between one (2% of all entities) and four (9% of all entities) ocean quahog entities would have had combined cap above these levels depending on the affiliation level (Table 19).

Sub-alternative 3.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. In general terms, sub-alternative 3.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, as indicated above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount

of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Since this sub-alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.2 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 3.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Comparisons Across Sub-Alternatives 3.1 to 3.3

In this section a comparison between sub-alternatives 3.1 through 3.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 3.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 3.2 and 3.3, as in general terms, no entity would be above the caps (if they had been implemented in 2017; the exception to this generality is listed below). In the long-term, alternative 3.1 would have no socioeconomic impacts in the long-term compared to sub-alternative 3.2, because they both could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 19). The exception to this generalization would be sub-alternative 3.1 under the cumulative 100% model which would result in two large entities participating in the surfclam fishery, and as such, provides a lesser degree of protection against excessive consolidation and associated market power and social issues. As such, this results in long-term positive impacts that are smaller in magnitude. Lastly, in general terms, sub-alternative 3.1 would have positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.1 has the potential to provide a larger degree of protection against excessive consolidation. However, some of the potential lower combined cap values under sub-alternative 3.1 (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 3.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 3.2 and 3.3.

In general terms, sub-alternative 3.2 would have slight positive socioeconomic impacts in the long-term compared to sub-alternatives 3.3, as sub-alternative 3.2 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. However, as noted above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Sub-alternative 3.3 would have slightly less positive socioeconomic impacts in the long-term compared to sub-alternatives 3.1 and 3.2, as sub-alternative 3.3 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 3.1 would result in the most positive impacts, sub-alternative 3.2 would result in the second most positive impacts, and sub-alternative 3.3 would result in the least positive impacts.

Under Alternative 4, a two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Mitchell et al. (2011) indicated that "the preference for short-term accumulations in the two-part cap limits the share of long-term quota controlled by any single party, which limits the ability to foreclose competitors by withholding quota on a committed multiseason basis." Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex contracting business practices that occur in these fisheries.

Under sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage tags) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) during the 2016-2017 period. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

Under sub-alternative 4.1, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 28% ownership / 28% combined under the net actual percentage model (at the individual/business level) or as high as 28% ownership / 49% combined under the cumulative 100% model (at the corporate officer level; Tables 2 and 20). Based on these combined cap values, sub-alternative 4.1 could result in a minimum number of four large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 22% ownership / 29% combined under the net actual percentage model (at the individual/business level) or as high as 22% ownership / 41% combined under the cumulative 100% model (at the corporate officer level; Tables 3 and 20). For ocean quahogs, this sub-alternative could result in a minimum number of five large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. Furthermore, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) during the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for 2016-2017 to allow for additional consolidation (Table 20). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. As with sub-alternative 4.1, the two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Table 20.

Under sub-alternative 4.2, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 43% ownership / 43% combined under the net actual percentage model (at the individual/business level) or as high as 43% ownership / 64% combined under the cumulative 100% model (at the corporate officer level; Table 20). Based on these combined cap values, sub-alternative 4.2 could result in a minimum number of three large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 37% ownership / 44% combined under the net actual percentage model (at the individual/business level) or as high as 37% ownership / 56% combined under the cumulative 100% model (at the corporate officer level; Table 20). For ocean quahogs, this sub-

alternative could result in a minimum number of three large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.2 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. A 30% ownership cap and a 60% combined cap (quota share ownership plus leasing of annual allocation or cage tags) could potentially result in a minimum of four large entities (if fully consolidated) participating in the fisheries (i.e., 30%, 30%, 30%, 10%; Table 20).

If the surfclam and ocean quahog two-part cap levels described above (i.e., 30%/60%) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.3 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.3 is expected to have socioeconomic impacts ranging from no impact

in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Comparisons Across Sub-Alternatives 4.1 to 4.3

In this section a comparison between sub-alternatives 4.1 through 4.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

In general terms, sub-alternatives 4.1, 4.2, and 4.3 are likely to have neutral socioeconomic impacts (e.g., similar magnitude and direction) in the short-term and long-term, because they all could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 20). In general terms, sub-alternatives 4.1 and 4.3 would result in neutral socioeconomic impacts in the short-run and long-run but marginally positive compared to sub-alternative 4.2. As such, they all have the potential to provide a relatively similar degree of protection against excessive consolidation and associated market power and social issues. In addition, none of these sub-alternatives would result in any entity been above the caps (if they had been implemented in 2017). However, some of the potential lower two-part cap values under sub-alternative 4.1 (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 4.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 4.2 and 4.3.

Under Alternatives 5, a cap on quota share ownership-only of 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags) would be implemented. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

The 40% cap under this alternative is based on recommendations found in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that

neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011).

This alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). The FMAT noted that the "two-part system" (i.e., cap on ownership plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of a "two-part system" is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 21).

As described in section 6.0, the surfclam and ocean quahog fisheries are quite special and unique in the following aspects. First, harvested surfclams and ocean quahogs must be processed before sale (e.g., clam strips, chopped or ground form for other products, such as high-quality soups and chowders). As such, processing requires more than simply heading and gutting. Second, there are a few byers of the processed products (e.g., Campbell Soup Company, Progresso, or large food service companies, such as Sysco). Lastly, for a number of years, the TAC has not been harvested.

The level the industry is willing and able to produce and sell in a given year, *ceteris paribus* (all else being equal) is the market equilibrium output (MEO). As indicated before, the current condition for both species is TAC [ACT] > MEO. A plausible explanation for the current state of excessive consolidation in the industry follows these three unique aspects in both fisheries. Given the share concentration levels in the processing sector, some processors could produce the MEO level of production with their own annual shares, and all other shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, in order to fulfill the market demand, all of the catch shares will have to be utilized and all ITQ shareholders would be able to utilize their shares and the monopsony power would disappear. Since the condition in these fisheries is that the TAC > MEO, some catch share owners cannot rent or sell their shares due to the monopsony power of the processors. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs (SSC 2019).[53]

If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 21). As such, no entity would have been constrained by the cap levels under alternative 5 in the surfclam or ocean quahog fisheries.

As indicated above, in addition to the cap on quota share ownership, this alternative would also establish Quota A and B shares (for each individual species). A hypothetical example of how the

[53] Report of the May 2019 SSC Meeting. Available at: http://www.mafmc.org/ssc.

two quota-tier system (Quota A shares and Quota B shares) would work is presented in section 5.1.5. In general terms, this alternative would align Quota A shares (the initial quota level) with recent years landings (a proxy for market demand). Quota A shares (and associated number of cage tags) would be released at the onset of the fishing year and Quota B shares (and associated number of cage tags) would be released when Quota A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. However, if the supply of quota released under Quota A shares equals the market demand, there may be less incentive for a quota holder to enter into long-term contracts. One of the reasons long-term contracts exist is that if a quota holder doesn't enter into one, then there is a real possibility that they won't be able to lease their quota out at all in a given fishing year as the overall quota level for these fisheries have been at values that exceed market demand. It is possible that under this alternative, if there is less of an incentive to enter into long-term leases, their arrangements may change if the price of leases increase.

The Atlantic Surfclam and Ocean Quahog Information Collection Program Data (Ownership Data) was designed to gather information on leases (short-term and long-term) to assist in determining contractual control of quota. However, industry members have indicated that they would not release this information as some people consider it private. As such, it is not likely that contractual control of quota can be accurately tracked.

Alternative 5 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, alternative 5 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase.

Furthermore, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. However, this is not expected to increase the cost of harvesting. The real cost of harvesting and processing should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners (SSC 2019; see footnote number 53 on page 150).

Surfclam and Ocean quahog processors have indicated in the past that they cannot influence the price of the products they sell, as the large companies that purchase from them (Campbell Soup Company, Progresso, etc.) will not consider price increases as they can buy other raw materials to produce their products. As such, it would be expected that profits for the processing sector would go down. In conclusion, while not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. If this alternative is selected by the Council additional analysis should be conducted to determine the appropriate trigger level.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. For example:

- It was indicated that establishing a Quota A and Quota B shares system would send a market signal indicating that the surfclam and ocean quahog quotas (TACs) have been reduced, because the amount of quota released under Quota A shares is lower than the overall TACs that have been implemented in recent years. This in turn could result in big companies that purchase clam products (Progresso, Campbell Soup Company, etc.) to switch to lower quality foreign imports
- Quota A and Quota B shares system would disrupt banking/financial arrangement because ITQ shares have been used as collateral in securing long-term loans
- Aligning the quota with market demand may not necessarily result in equilibrium because long-term contacts arrangement (leasing arrangements) exist in these fisheries; and breaking existing long-term contracts could result in lawsuits
- Aligning the quota with market demand would give market power to the industry members that have not been able to lease/use their ITQ shares in recent years
- This alternative could result in closing of processing plants
- There is the potential for someone to lease large quantities of A shares and not use them to develop market power

Under Alternatives 6, a cap on quota share ownership-only of 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) would be implemented. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. The only difference between alternatives 5 and 6 are the cap levels on quota share ownership, all other aspects of the alternatives are identical.

Like alternative 5, this alternative would also align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%). The resulting number of participating entities under this alternative are similar to those under sub-alternative 2.2 (which would also implement a 49% quota share cap; Table 18).

As described in section 6.0, the surfclam and ocean quahog fisheries are quite special and unique in the following aspects. First, harvested surfclams and ocean quahogs must be processed before sale (e.g., clam strips, chopped or ground form for other products, such as high-quality soups and chowders). As such, processing requires more than simply heading and gutting. Second, there are a few byers of the processed products (e.g., Campbell Soup Company, Progresso, or large food service companies, such as Sysco). Lastly, for a number of years, the TAC has not been harvested.

The level the industry is willing and able to produce and sell in a given year, *ceteris paribus* (all else being equal) is the market equilibrium output (MEO). As indicated before, the current condition for both species is TAC [ACT] > MEO. A plausible explanation for the current state of excessive consolidation in the industry follows these three unique aspects in both fisheries. Given the share concentration levels in the processing sector, some processors could produce the MEO level of production with their own annual shares, and all other shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, in order to fulfill the market demand, all of the catch shares will have to be utilized and all ITQ shareholders would be able to utilize their shares and the monopsony power would disappear. Since the condition in these fisheries is that the TAC > MEO, some catch share owners cannot rent or sell their shares due to the monopsony power of the processors. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs (SSC 2019; see footnote number 53 on page 153).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; see results under

sub-alternative 2.2 in Table 18). As such, no entity would have been constrained by the cap levels under alternative 6 in the surfclam or ocean quahog fisheries.

As indicated above, in addition to the cap on quota share ownership, this alternative would also establish Quota A and B shares (for each individual species). A hypothetical example how the two quota-tier system (Quota A shares and Quota B shares) would work is presented in section 5.1.5. In general terms, this alternative would align Quota A shares (the initial quota level) with recent years landings (a proxy for market demand). Quota A shares (and associated number of cage tags) would be released at the onset of the fishing year and Quota B shares (and associated number of cage tags) would be released when Quota A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. However, if the supply of quota released under Quota A shares equals the market demand, there may be less incentive for a quota holder to enter into long-term contracts. One of the reasons long-term contracts exist is that if a quota holder doesn't enter into one, then there is a real possibility that they won't be able to lease their quota out at all in a given fishing year as the overall quota level for these fisheries have been at values that exceed market demand. It is possible that under this alternative, if there is less of an incentive to enter into long-term leases, their arrangements may change if the price of leases increase.

The Atlantic Surfclam and Ocean Quahog Information Collection Program Data (Ownership Data) was designed to gather information on leases (short-term and long-term) to assist in determining contractual control of quota. However, industry members have indicated that they would not release this information as some people consider it private. As such, it is not likely that contractual control of quota can be accurately tracked.

Alternative 6 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, alternative 6 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary

practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase.

Furthermore, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. However, this is not expected to increase the cost of harvesting. The real cost of harvesting and processing should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners (SSC 2019; see footnote number 53 on page 153).

Surfclam and Ocean quahog processors have indicated in the past that they cannot influence the price of the products they sell, as the large companies that purchase from them (Campbell Soup Company, Progresso, etc.) will not consider price increases as they can buy other raw materials to produce their products. As such, it would be expected that profits for the processing sector would go down. In conclusion, while not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. If this alternative is selected by the Council additional analysis should be conducted to determine the appropriate trigger level.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed under alternative 5 and also apply here.

Comparisons Across All Excessive Shares Alternatives

In general terms, alternatives 5 and 6 would result in the largest positive impacts as a result of protection against market power or other anticompetitive behaviors and associated social issues, alternatives 3 and 4 would result in the second highest positive impacts, alternative 2 would result in the third highest positive impacts, and alternative 1 would result in the least positive impacts. More detail of the expected impacts is provided below.

Alternative 1 (No Action/Status Quo)

As previously indicated, under alternative 1 (no action) no limit or definition of excessive shares accumulation is included in the FMP. This alterative is expected to result in impacts ranging from no impacts in the short-term to negative impacts in the long-term when compared to alternatives 2 through alternative 6, because alternative 1 provides no protection against excessive consolidation and associated market power and social issues. The exception would be when alternative 1 is compared to sub-alternative 2.3, as sub-alternative 2.3 could potentially allow for share concentration levels similar to those under alternative 1, and it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Compared to sub-alternative 2.3, alternative 1 is likely to have a similar magnitude of socioeconomic impacts (i.e., neutral).[54]

None of the excessive share alternatives discussed in this document are expected to impact the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions.

Alternative 2

Alternative 2 would implement a single cap based on quota share ownership-only with unlimited leasing of annual allocations (cage tags). Because alternative 2 is based on ownership-only values, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative would limit the exercise of market power through capping ownership levels for surfclams and ocean quahogs, but it does not address the creation or exercise of market power through contractual control of quota.

Alternative 2 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 3 and alternative 4, alternative 2 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternatives 3 and 4).

Lastly, alternative 2 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

[54] Since sub-alternative 2.3 is likely to result in impacts similar to those under alternative 1, all other comparisons involving alternative 2 exclude sub-alternative 2.3, with the understanding that when comparisons are made with sub-alternative 2.3 exclusively, impacts would be similar to those under alternative 1 (no action/*status quo*).

Alternative 3

Alternative 3 would implement a combined cap based on quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Alternative 3 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 3 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 3). Compared to alternative 4, alternative 3 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 3 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 4

Alternative 4 would implement a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Alternative 4 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 4 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 4). Compared to alternative 3, alternative 4 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would

limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 4 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 5

Alternative 5 would implement a cap on quota share ownership-only with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Alternative 5 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because alternative 5 not only addresses the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also aligns supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. For these same reasons, alternative 4 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) compared to alternatives 2, 3, and 5, but likely smaller in magnitude. Lastly, compared to alternative 6, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. While not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

However, as indicated above, during the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed above under alternative 5.

Alternative 6

The expected impacts under alternative 6 are similar to those described under alternative 5 above.

7.4.2 Excessive Shares Review Alternatives

Under alternative 1 (no action/s*tatus quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. Therefore, the no action alternative is expected to have no impact on the quantity of surfclam or ocean quahog landings, including revenues. However, as previously indicated, conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure established at an appropriate level now could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry). Thus, not having a mechanism in place to review the effectiveness of implemented excessive shares measures could result in socioeconomic impacts that range from no impacts (if implemented excessive shares measures or cap level is appropriate through time) to slight negative (if implemented excessive shares measures or cap level is not appropriate through time). Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. As with the no action alternative above, alternative 2 is not expected to have impacts on the quantity of surfclam or ocean quahog landings, including revenues. However, this alternative allows periodic review of excessive shares measures that the Council adopts. As previously indicated conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. This alternative would implement a periodic review of regulations to protect against market power or other anticompetitive behaviors in these fisheries in a timely manner. Alternative 2 is expected to result in socioeconomic impacts ranging from no impacts to slight positive. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts. While it is not possible to anticipate the potential management costs associated with alternative 2, they are likely to be higher than those associated with alternative 1. Costs will depend on the complexity and scope of the review process.

7.4.3 Framework Adjustment Process Alternatives

Under alternative 1 (no action/s*tatus quo*), the list of management measures that have been identified in the FMP that could be addressed via framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process.

The Council would still have the prerogative to review any adopted excessive shares measures and make modifications to any implemented excessive cap level through an amendment if it becomes inefficiently high or low through time as fisheries conditions change. However, making modifications to existing regulations using an amendment process requires more work and time compared to a framework process. Not having the flexibility to make minor modifications to the excessive shares cap level (no action alternative) could result in socioeconomic impacts ranging

from no impact to slightly negative. Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). The proposed alternative would provide flexibility to address potential modifications to any implemented excessive cap level if it becomes inefficiently high or low through time as fisheries conditions change. Alternative 2 is expected to result in socioeconomic impacts that range from no impact to slight positive. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts because this alternative provides the flexibility to adjust potential modifications to any implemented excessive cap level if it becomes inefficiently or low through time as fisheries conditions change, and this has the potential to reduce needed staff time and management cost.

7.4.4 Multi-Year Management Measures Alternatives

Under alternative 1 (no action/s*tatus quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no socioeconomic impacts. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no socioeconomic impacts. Alternative 2 would have socioeconomic impacts that are the same as those under alternative 1.

Although there are no socioeconomic impacts associated with alternative 2, it is expected that it would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

7.5 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ; 40 CFR §1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective. Rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required under NEPA as part of an EA if the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed surfclams and ocean quahog fisheries.

7.5.1 Consideration of the VECs

The following sections discuss the significance of the cumulative effects on the following VECs:

- Managed resource (Atlantic surfclam and ocean quahog) and non-target species
- Physical environment
- Protected species
- Human communities

7.5.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of Atlantic surfclam and ocean quahog. The Western Atlantic Ocean is the core geographic scope for each of the VECs. The core geographic scopes for the managed species are the management units (section 6.1). For non-target species, those ranges may be expanded and would depend on the range of each species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by surfclam and ocean quahog and non-target species in the Western Atlantic Ocean. The core geographic scope for protected species is their range in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities in coastal states from Maine through Virginia directly involved in the harvest or processing of the managed species (section 6.4).

7.5.3 Temporal Boundaries

The temporal scope of past and present actions for VECs is primarily focused on actions that have occurred after FMP implementation (1977 for surfclam and ocean quahog). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.3) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about three years (2022) into the future. This period was chosen because the dynamic nature of resource management and lack of information on projects that may occur in the future make it very difficult to predict impacts beyond this timeframe with any certainty.

7.5.4 Actions Other Than Those Proposed in this Document

The impacts of the alternatives considered in this document are described in sections 7.1 through 7.4. Table 22 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions other than those considered in this document. The impacts of these actions are described qualitatively as the actual impacts are too complex to be quantified in a meaningful way. When any of these abbreviations (P, Pr, or RFF), occur together it indicates that some past actions are still relevant to the present and/or future actions.

Fishery Management Actions

Surfclam and Ocean Quahog FMP Actions

Past, present, and reasonably foreseeable future actions for surfclam and ocean quahogs management include the establishment of the original FMPs, all subsequent amendments and frameworks, and the setting of annual specifications (annual catch limits and measures to constrain catch and harvest). These fisheries are managed under an ITQ system, and recently, the NMFS implemented a data collection protocol process to collect information about quota share ownership that would enhance the management of these fisheries. The historical management practices of the Council have resulted in overall positive impacts on the health of the surfclam and ocean quahog stocks (section 7.5.5.1). The Council has taken many actions to manage the associated commercial fisheries. The MSA is the statutory basis for federal fisheries management. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Other FMP Actions

In addition to the Atlantic Surfclam and Ocean Quahog FMP, there are many other FMPs and associated fishery management actions for other species that have impacted these VECs over the temporal scale described in section 7.3.3. These include FMPs managed by the Mid-Atlantic Fishery Management Council, New England Fishery Management Council, Atlantic States Marine Fisheries Commission, and to a lesser extent the South Atlantic Fishery Management Council. Omnibus amendments are also frequently developed to amend multiple FMPs at once. Actions associated with other FMPs and omnibus amendments have included measures to regulate fishing effort for other species, measures to protect habitat and forage species, and fishery monitoring and reporting requirements.

As with the surfclam and ocean quahog actions described above, other FMP actions developed by Fishery Management Councils or GARFO have been developed in compliance with the MSA and have had positive long-term cumulative impacts on managed and non-target species, habitat, and protected resources because they constrain fishing effort and manage stocks at sustainable levels. However, constraining fishing effort through regulatory actions can have negative short-term

socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Non-Fishing Impacts

Other Human Activities

Non-fishing activities that introduce chemical pollutants, sewage, or suspended sediment into the marine environment or result in changes in water temperature, salinity, or dissolved oxygen, pose a risk to all VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging, and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and as such may indirectly constrain the sustainability of managed species, non-target species, and protected species. Decreased habitat suitability tends to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that reduce fishing effort could negatively impact human communities. The overall impact on the affected species and their habitats on a population level is unknown, but likely to range from no impact to low negative, depending on the population, since a large portion of these populations have a limited or minor exposure to these local non-fishing perturbations.

Non-fishing activities permitted under other Federal agencies (e.g., beach nourishment, offshore wind facilities, etc.) require examinations of potential impacts on the VECs. The MSA imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH (50 CFR §600.930). The eight regional fishery management councils engage in this review process by making comments and recommendations on federal or state actions that may affect habitat for their managed species and by commenting on actions likely to substantially affect habitat.

In addition to the activities above, in recent years, offshore wind energy and oil and gas exploration have become more relevant activities in the Greater Atlantic region that are expected to impact all VECs, as described below. For potential biological impacts of wind, the turbines and cables may influence water currents and electromagnetic fields, respectively, which can affect patterns of movement for various species (target, non-target, protected). Habitats directly at the turbine and cable sites would be affected, and there could be scouring concerns around turbines. Impacts on human communities in a general sense will be mixed – there will be economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generated using fossil fuels with renewable sources. But there may be negative effects on fishing activities in terms of effort displacement, or making fishing more difficult or expensive near the turbines or cables.

For oil and gas, this timeframe would include leasing and possible surveys. Seismic surveys impact the acoustic environment within which marine species live, and have uncertain effects on fish behaviors that could cumulatively lead to negative population level impacts. The science on this

is fairly uncertain. If marine resources are affected by seismic, then so in turn the fishermen targeting these resources would be affected. However, there would be an economic component in the form of increased jobs where there may be some positive effects on human communities.

While there are currently no operational wind farms in Mid-Atlantic waters, potential offshore wind energy sites have been identified off of Virginia, Maryland, New Jersey, Delaware, and New York, and there are several proposals to develop wind farms in both nearshore and offshore waters. In New England, offshore wind project construction south of Massachusetts/Rhode Island may begin as early as 2019 (three projects including Vineyard Wind, Bay State Wind, and South Fork Wind Farm). Additional areas have been leased and will have site assessment activities in the next few years. These projects could have low negative impacts on EFH, as well as surfclam and ocean quahog, non-target species, and fishing communities if there are any negative impacts on those resources. Furthermore, there could be negative impacts on protected species of birds and marine mammals if they interact with the wind farms.

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats on a population level is unknown, but likely to range from no impact to moderate negative, depending on the number and locations of projects that occur, as well as the effects of mitigation efforts.

Global Climate Change

Global climate change affects all components of marine ecosystems, including human communities. Physical changes that are occurring and will continue to occur to these systems include sea-level rise, changes in sediment deposition; changes in ocean circulation; increased frequency, intensity and duration of extreme climate events; changing ocean chemistry, and warming ocean temperatures. Emerging evidence demonstrates that these physical changes are resulting in direct and indirect ecological responses within marine ecosystems which may alter the fundamental production characteristics of marine systems (Stenseth et al. 2002). Climate change will potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors.

Results from the Northeast Fisheries Climate Vulnerability Assessment indicate that climate change could have impacts on Council-managed species that range from negative to positive, depending on the adaptability of each species to the changing environment (Hare et al. 2016).[55] Based on this assessment, surfclam was determined to have a high overall vulnerability to climate change. The exposure of surfclam to the effects of climate change was determined to be “high” due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All surfclam life stages use marine habitats. Surfclam spawning occurs in summer and early fall in warm water, starting earlier inshore than offshore. Surfclam eggs hatch into a trochophore larvae within 1-2 days of fertilization. Larvae cannot survive high temperatures. Juveniles and adults occur in coastal waters up to 66 m. The distributional vulnerability of surfclam was ranked as "high," as surfclam mortality is higher at higher

[55] Climate vulnerability profiles for individual species are available at: https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index

temperatures. Surfclam was determined to have a “high” biological sensitivity to climate change as they form calcium carbonate shell and adults are sessile.

This assessment determined ocean quahog had a very high overall vulnerability to climate change. Similar to surfclam, the exposure of ocean quahog to the effects of climate change was determined to be “high” due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All ocean quahog life stages use marine habitats. Ocean quahog is a cold-water, long-lived bivalve. Ocean quahog broadcast spawn over a protracted season and planktonic eggs mature into free-swimming trochophore, the pediveliger stage, swims, but also has a foot for burrowing. Temperatures affect growth rate. Juveniles occur in offshore sandy substrates and adults occur in dense beds over level bottom just below the surface sediments in medium to fine grain sand. Ocean quahogs usually occur at depts between 25-61 m and temperature regulates the cross-shelf distribution. Also similar to surfclam, the distributional vulnerability was ranked as “high” as growth slows at higher temperatures. Ocean quahog was determined to have a “very high” biological sensitivity to climate due to population growth rate, sensitivity to ocean acidification, adult mobility, slow growth, from calcium carbonate shell, and adults are sessile (Hare et al. 2016).

Overall, climate change is expected to have impacts that range from positive to negative depending on the species. For surfclams and ocean quahogs climate change impacts are high. However, future mitigation and adaptation strategies to climate change may mitigate some of these impacts. The science of predicting, evaluating, monitoring and categorizing these changes continues to evolve.

Table 22. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr **Original Surfclam and Ocean Quahog FMP and subsequent FMP Amendments and Frameworks**	Established management measures	**Indirect Positive** Regulatory tool available to rebuild and manage stocks	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Benefited domestic businesses
P, Pr **Surfclam and Ocean Quahog Specifications**	Establish quotas, other fishery regulations	**Indirect Positive** Regulatory tool to specify catch limits, and other regulation; allows response to annual stock updates	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Benefited domestic businesses
P, Pr, RFF **Developed, Applied, and Redo of Standardized Bycatch Reporting Methodology**	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	**No Impact** May improve data quality for monitoring total removals of managed resource	**No Impact** May improve data quality for monitoring removals of non-target species	**No Impact** Will not affect distribution of effort	**No Impact** May increase observer coverage and will not affect distribution of effort	**Potentially Indirect Negative** May impose an inconvenience on vessel operations
P, Pr, RFF **Other FMPs and Omnibus Actions**	Regulating fishing effort in other FMPs, habitat and forage species protection, industry monitoring and reporting	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Indirect Positive** Reduced fishing effort, implemented gear requirements	**Indirect Positive** Regulated fishing effort, implemented gear requirements	**Mixed** Benefited some domestic businesses; negative impacts on some participants due to limited access and constraints on landings and revenues
P, Pr, RFF **PSP Closed Areas**	Reopening of PSP Closed Areas to Clam fishing	**No Impact to Indirect Negative** Fishery impacts in previously unfished areas	**Indirect Positive** Reduced overall fishing effort	**Indirect Positive** Reduced overall fishing effort	**No Impact** Limited interactions with gear occur	**Indirect Positive** Benefitted domestic businesses

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Agricultural runoff**	Nutrients applied to agricultural land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource
P, Pr, RFF **Climate change**	Wide-ranging impacts including changes in ocean chemistry, temperatures, sea-level, and ocean circulation; increased frequency, intensity, and duration of extreme climate events.	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Decreased habitat quality, suitability and/or availability for some species; increased quality/suitability/availability for others	**Negative to positive** Depending on impacts to habitat and prey availability	**Negative to positive** Depending on resiliency of individual communities and mitigation/adaptation
P, Pr, RFF **Port maintenance**	Dredging of coastal, port and harbor areas for port maintenance	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
P, Pr, RFF **Offshore disposal of dredged materials**	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability
P, Pr, RFF **Beach nourishment**	Offshore mining of sand for beaches	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for mining companies, possibly negative for fishing industry
	Placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Positive** Beachgoers like sand; positive for tourism

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Marine transportation**	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for some interests, potential displacement for others
P, Pr, RFF **Renewable and Non-renewable Offshore and Nearshore Energy Development**	Transportation of oil, gas, and electric through pipelines and cables; Construction of oil platforms, wind facilities, liquefied natural gas facilities; Additional port development infrastructure	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Reduced habitat quality; offshore platforms may benefit structure oriented fish species habitat	**Potentially Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
Pr, RFF **Implementation of Data Collection Protocol**	Collect data needed to track ITQ share ownership within the fishery	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**Uncertain – Likely Mixed** Collects data needed to evaluate excessive shares cap, but additional paperwork may be required
RFF **Amendment to address Excessive Shares (within 3 years)**	Establish a cap for excessive share accumulation	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**Indirect Positive** Protects against excessive share accumulation in fishery

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
RFF **Omnibus EFH Amendment 2 (NEFMC) and Clam Access Frameworks**	Revises essential fish habitat and habitat area of particular concern designations, revises or creates habitat management areas, including gear restrictions	**Indirect Positive** Improve habitat quality	**Indirect Positive** Improve habitat quality	**Indirect Positive** Improve habitat quality	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues
RFF **Convening of Take Reduction Teams (periodically)**	Recommend measures to reduce mortality and injury to marine mammals	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

7.5.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section describes the expected effects of these actions on each VEC.

7.5.5.1 Magnitude and Significance of Cumulative Effects on Managed Species and Non-Target Species

Those past, present, and reasonably foreseeable future actions which may impact target species (surfclam and ocean quahog) and non-target species, and the direction of those potential impacts, are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore and marine areas where the projects occur; therefore, the magnitude of those impacts on the managed resources is expected to be limited due to limited exposure to the populations at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on productivity of the managed resources is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and the annual specifications process have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions described in Table 22 will have additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect the ecosystem services on the productivity of managed species depends. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the managed resources have had positive cumulative effects.

Catch limits, commercial quotas and recreational harvest limits for each of the managed species have been specified to ensure that these rebuilt stocks are managed sustainably and that measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from specification of management measures are largely dependent on how effective those measures are in meeting the objectives of preventing overfishing and achieving optimum yield, and on the extent to which mitigating measures are effective. The proposed actions described in this document would positively reinforce the past and anticipated positive cumulative effects on the managed resources by achieving the objectives specified in the respective FMP and ensuring the requirements of the MSA are met. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (Table 22).

7.5.5.2 Magnitude and Significance of Cumulative Effects on Physical Environment

Those past, present, and reasonably foreseeable future actions which may impact the physical environment and habitat (including EFH), and the direction of those potential impacts, are summarized in Table 22. The direct and indirect negative actions described in Table 22 are localized in nearshore and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to limited exposure of habitat at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on habitat is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by species under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and annual specifications process have had positive cumulative effects on habitat. The actions have constrained fishing effort both at a large scale and locally and have implemented gear requirements which may reduce impacts on habitat. As required under these FMP actions, EFH and Habitat Areas of Particular Concern were designated for the managed resources. It is anticipated that the future management actions described in Table 22 will result in additional direct or indirect positive effects on habitat through actions which protect EFH and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All the VECs are interrelated; therefore, the linkages among habitat quality, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and will likely continue to be, taken to improve the condition of habitat. Some actions, such as coastal population growth and climate change may indirectly impact habitat and ecosystem productivity; however, these actions are beyond the scope of NMFS and Council management. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had neutral to positive cumulative effects.

The proposed actions described in this document are largely administrative in nature and would not significantly change the past and anticipated cumulative effects on habitat and thus would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (Table 22).

7.5.5.3 Magnitude and Significance of Cumulative Effects on Protected Species

Those past, present, and reasonably foreseeable future actions which may impact protected species, and the direction of those impacts, are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore and marine project areas where they occur. Therefore, the magnitude of those impacts on protected species is expected to be limited due to limited exposure of the populations at large. Agricultural runoff may be much broader in scope

and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on protected species is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact protected species prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected species under NMFS' jurisdiction.

Given their life history dynamics, large changes in protected species abundance over long time periods, and the multiple and wide-ranging fisheries management actions that have occurred, the cumulative impacts on protected species were evaluated over a long-time frame (i.e., from the 1970's through the present). While some protected species are doing better than others, overall the trend of stock condition for protected resources has improved over the long-term due to reductions in the number of interactions. Past fishery management actions taken through the respective FMPs and annual specifications process have contributed to this long-term trend toward positive cumulative effect on protected species through the reduction of fishing effort (and thus reduction in potential interactions) and implementation of gear requirements. It is anticipated that future management actions, described in Table 22, will result in additional indirect positive effects on protected species. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected species have had a positive cumulative effect.

The proposed actions described in this document are largely administrative in nature and would not change the past and anticipated cumulative effects on protected species and thus would not have any significant effect on protected species individually or in conjunction with other anthropogenic activities (Table 22). Overall, actions have had, or will have, positive impacts on protected species.

7.5.5.4 Magnitude and Significance of Cumulative Effects on Human Communities

Those past, present, and reasonably foreseeable future actions which may impact human communities and the direction of those potential impacts are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. Those actions may displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal ecosystem may larger in magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the respective FMPs and annual specifications process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices while also sometimes reducing the availability

of the resource to fishery participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions described in Table 22 will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur if management actions result in reduced revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had overall positive cumulative effects.

Catch limits and commercial quotas for each of the managed species have been specified to ensure that these rebuilt stocks are managed in a sustainable manner and that management measures are consistent with the objectives of the FMPs under the guidance of the MSA. The impacts from annual specification of management measures on the managed species are largely dependent on how effective those measures are in meeting their intended objectives and the extent to which mitigating measures are effective.

Despite the potential for negative short-term effects on human communities, positive long-term effects are expected due to the long-term sustainability of the managed stocks. Overall, the proposed actions described in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (Table 22).

7.5.6 Preferred Action on all the VECs

[This section will be completed prior to submission to the NMFS]

8.0 APPLICABLE LAWS

8.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

8.1.1 National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The most recent FMP amendments describe how the management actions implemented comply with the National Standards. The Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield (OY) for Atlantic surfclam and ocean quahogs and the U.S. fishing industry.

To achieve OY, both scientific and management uncertainty need to be addressed when establishing catch limits that are less than the Overfishing Limit (OFL); therefore, the Council develops recommendations that do not exceed the ABC recommendations of the SSC which have been developed to explicitly address scientific uncertainty. In addition, the Council has considered relevant sources of management uncertainty and other social, economic, and ecological factors, which resulted in recommendations for annual catch targets for both managed resources. The Council uses the best scientific information available (National Standard 2) and manages both species throughout their range (National Standard 3). These management measures do not discriminate among residents of different states (National Standard 4), they do not have economic allocation as their sole purpose (National Standard 5), the measures account for variations in these fisheries (National Standard 6), they avoid unnecessary duplication (National Standard 7), they take into account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). Finally, actions taken are consistent with National Standard 9, which addresses bycatch in fisheries. The Council has implemented many regulations that have indirectly acted to reduce fishing gear impacts on EFH. By continuing to meet the National Standards requirements of the MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will ensure that cumulative impacts of these actions will remain positive overall for the ports and communities that depend on these fisheries, the Nation as a whole, and certainly for the resources.

8.2 NEPA FINDING OF NO SIGNIFICANT IMPACT (FONSI)

[This section will be completed prior to submission to the NMFS]

The CEQ Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR §1508.27). In addition, the Companion Manual for NOAA Administrative Order 216-6A provides sixteen criteria (the same ten as the CEQ Regulations and six additional) for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

16. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting EA, it is hereby determined that the proposed actions in this document will not significantly impact the quality of the human environment as described above and in the EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

_____ _____

Regional Administrator for GARFO, NMFS, NOAA *Date*

8.3 Endangered Species Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on ESA-listed and MMPA protected resources. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on these fisheries.

8.4 Marine Mammal Protection Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on marine mammals protected under the MMPA. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect marine mammals or critical habitat in any manner not considered in previous consultations on the fisheries. A final determination of consistency with MMPA will be made by the agency during the rulemaking process.

8.5 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council has developed this amendment document and will submit it to NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through Virginia).

8.6 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of an FMP and subsequent amendments and framework adjustments. Development of this amendment document provided many opportunities for public review, input, and access to the rulemaking process. This action and the proposed measures were developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to comment during the public scoping period (from June 23, 2017 to July 21, 2017). The public also had the opportunity to review and comment on management measures/goals and objectives during the Council meeting in October 2017, June 2018, April 2017, and June 2019. FMAT meetings and advisory panel meetings were also open to the public. Public hearings will be held and provide addition opportunity for comment from the public, prior to the Council's decision to submit the document to NMFS. In addition, the public will have further opportunity to comment on this amendment document when NMFS publishes a request for comments notice in the Federal Register.

8.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes measures for setting measures to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. This action would also revise the process for specifying multi-year management measures, require periodic review of the excessive shares cap level, and allow adjustments to the made under the frameworkable provisions of the FMP. In addition, this amendment considers revisions to some or all of the current management objectives for the Atlantic Surfclam and Ocean Quahog FMP. This document includes: A description of the alternatives considered, the preferred action and rationale for selection, and any changes to the implementing regulations of the FMP (if applicable). As such, this document enables the implementing agency (NMFS) to make a decision on implementation and this document serves as a supporting document for the proposed rule.

The action contained within this amendment document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during a number of public meetings (see section 8.6). In addition, the public will have further opportunity to comment on this amendment document once NMFS publishes a request for comments notice in the Federal Register.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g., Confidentiality of Statistics of the MSA; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR §229.11, Confidentiality of information collected under the Marine Mammal Protection Act).

Objectivity of Information Product

The category of information product that applies here is "Natural Resource Plans." Section 8.0 describes how this document was developed to be consistent with any applicable laws, including MSA with any of the applicable National Standards. The analyses used to develop the alternatives (i.e., policy choices) are based upon the best scientific information available. The most up to date information was used to develop the EA which evaluates the impacts of those alternatives (see section 7.0). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the surfclam and ocean quahog fisheries.

The review process for this amendment document involves MAFMC, NEFSC, GARFO, and NMFS headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and non-economic social sciences. The MAFMC review process involves public meetings at which affected stakeholders have the opportunity to comments on proposed management measures. Review by GARFO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, and compliance with the applicable laws. Final approval of the amendment document and clearance of the rule is conducted by staff at NMFS Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.8 Paperwork Reduction Act

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

8.9 Impacts of the Plan Relative to Federalism/EO 13132

This document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

8.10 Regulatory Impact Review / Initial Regulatory Flexibility Analysis

[This section will be completed prior to submission to the NMFS].

During the public hearings for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, we are seeking industry and public input in categorizing current allocation holders by matching allocation holders using the industries described in the North American Industry Classification System Codes (NAICS) for the purpose of conduction the Regulatory Flexibility Analysis (RFA).

The NAICS codes are used to categorize businesses by industry description (e.g., commercial harvester, processor, bank, for-hire vessel). As an example, the SBA defines a small business in the commercial fishing industry as a firm with total annual receipts (gross revenues) not in excess of $11.0 million. A small business in the recreational for-hire fishery is a firm with receipts of up to $7.5 million.

The FMAT used the Small Business Administration table of Small Business Size Standards matched to the NAICS Codes to categorize current surfclam and ocean quahog allocations holders (See Tables X and Y below) and seeks industry and public input on the categorizations made or any missing information. This data will be used when finalizing the analysis in this section once the Council selects the prefer alternative.

The NMFS requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new FMP or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses many items in the regulatory philosophy and principles of EO 12866.

The Regulatory Flexibility Act (RFA) requires the Federal rulemaker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. In reviewing the potential impacts of proposed regulations, the agency must either certify that the rule "will not, if promulgated, have a significant economic impact on a substantial number of small entities." As indicated in section 5.0, the proposed actions in this document would implement measures to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges, measures that facilitate for the periodic review of implemented excessive cap level, measures that facilitate revisions to the process for specifying multi-year management measures, and measures that allow modifications to the excessive shares cap level via framework actions. An Initial Regulatory Flexibility Analysis (IRFA) will be prepared to further evaluate the economic impacts of the various alternatives presented once the Council has identified preferred alternatives. This analysis supports a more thorough analysis (RFA Analysis) which will be completed.

Table X. SBA classification for 2017 ocean quahog allocation owners of record.

SBA Code	Size Standard in Millions	SBA Classification	Alloc. #	Owner of Record	Street	City	State
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q667	Bumble Bee Foods LLC c/o Gabriel Montesano	280 10th Ave	San Diego	CA
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q649	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	Q664	TD Bank NA Attn: David Nilsen, Sr. Vice President	1101 Hooper Ave	Toms River	NJ
522110	$550 million in assets	Commercial Banking	Q691	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
522130	$550 million in assets	Credit Unions	Q690	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ
?	?	?	Q684	ITQ LLC	PO Box 727	Manahawkin	NJ
?	?	?	Q199	Legend Inc	607 Seashore Rd	Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q112	Wando River Corporation c/o Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
114113	$11 million in revenues	Commercial fishing	Q194	John Kelleher C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
114113	$11 million in revenues	Commercial fishing	Q021	Atlantic Vessels of Delaware Inc	PO Box 178	Norfolk	VA

114113	$11 million in revenues	Commercial fishing	Q055	Kristy Lee Clam Co	PO Box 114	Newcomb	NY
114113	$11 million in revenues	Commercial fishing	Q629	LET Ventures Incorporated (Ellen W LLC)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q006	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
114113	$11 million in revenues	Commercial fishing	Q576	Foxy Investments Inc C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	Q609	M J Holding Co LLC	PO Box 114	Newcomb	NY
114113	$11 million in revenues	Commercial fishing	Q596	Atlantic Vessels Inc	PO Box 178	Norfolk	VA
114113	$11 million in revenues	Commercial fishing	Q115	LET Ventures Incorporated (Patti B Clam Ventures Inc)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q181	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
?	?	?	Q672	OSM Resources LLC	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q598	John W Kelleher Trust C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
?	?	?	Q676	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL

114113	$11 million in revenues	Commercial fishing	Q005	LET Ventures Incorporated (A & B Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q049	LET Ventures Incorporated (Sarah C Conway Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q128	LET Ventures Incorporated (F/V Ocean View Inc)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q109	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD
114113	$11 million in revenues	Commercial fishing	Q101	T & M Clammers Inc	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q193	Peter A LaMonica C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
?	?	?	Q107	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q174	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q084	LET Ventures Incorporated (B&B Shellfishing Inc)	PO Box 727	Manahawkin	NJ
?	?	?	Q685	NSR Resources LLC	PO Box 727	Manahawkin	NJ
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	Q016	George S Carmines In Trust	103 Rens Rd	Poquoson	VA
?	?	?	Q003	Adriatic Inc	10127 Keyser Point Road	Ocean City	MD

?	?	?	Q669	Kenneth W Bailey	PO Box 12	Heislerville	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q658	DC Air & Seafood Inc	PO Box 581	Winter Harbor	ME
?	?	?	Q056	Seafish Inc	10134 Waterview Dr	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	Q143	Shellfish Inc	PO Box 86	West Sayville	NY

Table Y. SBA classification for 2017 surfclam allocation owners of record.

SBA Code	Size Standard in Millions	SBA Classification	Alloc. #	Owner of Record	Street	City	State
?	?	?	C624	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
424460	100 employees	Fish and Seafood Merchant Wholesalers	C583	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	C632	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
522130	$550 million in assets	Credit Unions	C529	Farm Credit East, ACA Attn: Benjamin Thompson	240 South Rd	Enfield	CT
NA	Public Administration: Small business size standards are not established for this Sector. Establishments in the Public Administration Sector are Federal, state, and local government agencies which administer	Sector 92	C669	US DOC NOAA/NMFS Financial Services Division	55 Great Republic Dr	Gloucester	MA
NA		Sector 92	C666	US DOC NOAA/NMFS Financial Services Division ITF Michael and Danny NOAA ITQs	55 Great Republic Dr	Gloucester	MA

	and oversee government programs and activities that are not performed by private establishments.			Attn: James Plouffe			
?	?	?	C136	Stephanie Dee Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	C660	First Niagara Bank NA ITF DPL Niagara Enterprises LLC Attn: Terri Kratz	401 Plymouth Rd Ste 600	Plymouth Meeting	PA
114113?	$11 million in revenues?	Commercial fishing?	C009	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C188	Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
522110	$550 million in assets	Commercial Banking	C634	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
114113	$11 million in revenues	Commercial fishing	C074	Kristy Lee Clam Co	PO Box 114	Newcomb	NY
522130	$550 million in assets	Credit Unions	C546	Farm Credit East, ACA FBO JM & MT Attn: Benjamin Thompson	240 South Rd	Enfield	CT
114113	$11 million in revenues	Commercial fishing	C589	Yannis Karavia LLC C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
522130	$550 million in assets	Credit Unions	C627	Farm Credit East, ACA Attn: Scott Kenney	240 South Rd	Enfield	CT
424460	100 employees	Fish and Seafood Merchant Wholesalers	C540	George Torggler	921 Preserve Dr	Annapolis	MD
522130	$550 million in assets	Credit Unions	C662	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ

424460	100 employees	Fish and Seafood Merchant Wholesalers	C663	DPL ITQs LLC	PO Box 309	Millville	NJ
114113	$11 million in revenues	Commercial fishing	C528	LNA Inc	PO Box 178	Portsmouth	RI
114113?	$11 million in revenues?	Commercial fishing?	C146	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	C026	George S Carmines In Trust	103 Rens Rd	Poquoson	VA
522130	$550 million in assets	Credit Unions	C547	Farm Credit East, ACA FBO LET Attn: Benjamin Thompson	240 South Rd	Enfield	CT
?	?	?	C004	Adriatic Inc	10127 Keyser Point Road	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C642	CCCFA Inc Attn: Seth Rolbein	1566 Main St	Chatham	MA
114113	$11 million in revenues	Commercial fishing	C563	LET Ventures Incorporated (Ellen W LLC)	PO Box 727	Manahawkin	NJ
NA	Public Administration: Small business size standards are not established for this Sector. Establishments in the Public Administration Sector are Federal, state, and local government agencies which administer and oversee government programs and activities that are not performed by private establishments.	Sector 92	C674	US DOC NOAA/NMFS Financial Services Division ITF LaVecchia and LaVecchia LLC Attn: James Plouffe	55 Great Republic Dr	Gloucester	MA
114113	$11 million in revenues	Commercial fishing	C110	LET Ventures Incorporated (F/V Ocean Bird Inc)	PO Box 727	Manahawkin	NJ

?	?	?	C133	City of Southport Inc	854 Tern Ln Apt 103	Salisbury	MD
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	C552	M J Holding Co LLC	PO Box 114	Newcomb	NY
?	?	?	C664	Faye Y Watson	10222 Golf Course Rd	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C065	LET Ventures Incorporated (Sarah C Conway Inc)	PO Box 727	Manahawkin	NJ
?	?	?	C166	Nantucket Shoals Inc Attn: Albert C Rosinha Jr	147 Pine St	Rochester	MA
522110	$550 million in assets	Commercial Banking	C559	Sturdy Savings Bank (P & E) Attn: Commercial Loans	PO Box 900	Cape May Court House	NJ
522110	$550 million in assets	Commercial Banking	C655	Audubon Savings Bank ITF Cape Cod of Maryland Inc Attn: Letitia C. Baum, Senior Vice President	515 S White Horse Pike	Audubon	NJ
114113	$11 million in revenues	Commercial fishing	C007	LET Ventures Incorporated (A & B Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C046	LET Ventures Incorporated (B & D Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C215	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ
?	?	?	C189	Anthony W Watson	10232 Golf Course Rd	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C151	LET Ventures Incorporated	PO Box 727	Manahawkin	NJ

				(Patti B Clam Ventures Inc)			
?	?	?	C080	TMT Allocations Inc (Leprechaun Inc)	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C454	LET Ventures Incorporated (Leroy E Truex)	PO Box 727	Manahawkin	NJ
?	?	?	C584	Mabel Susan III Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C099	Mabel Kim Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C033	Big Diamond Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C201	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD
114113	$11 million in revenues	Commercial fishing	C561	Roy Osmundsen	14 Whippoorwill Ln	Cape May Court House	NJ
114113	$11 million in revenues	Commercial fishing	C134	LET Ventures Incorporated (Starlight Comm Fish Inc)	PO Box 727	Manahawkin	NJ
?	?	?	C8270	Jacek Kubiak	8 Cove Dr	North Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C149	Wando River Corporation c/o Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
424460	100 employees	Fish and Seafood Merchant Wholesalers	C568	Daniel M Cohen	985 Ocean Dr	Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C515	Dolores Truex	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C127	Gary Osmundsen	12 Rabbit Run	Cape May	NJ
114113	$11 million in revenues	Commercial fishing	C135	T & M Clammers Inc	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C079	Lauren Kim Inc	12 Rabbit Run	Cape May	NJ

522130	$550 million in assets	Credit Unions	C656	Farm Credit East, ACA Attn: David A Bishop	2 Constitution Dr	Bedford	NH
?	?	?	C560	Mary Patricia Price	540 Hidden Pines Blvd	New Smyrna Beach	FL
?	?	?	C613	NSR Resources LLC	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C638	Vongole Ragazzi LLC	48 Gorton Rd	Millville	NJ
?	?	?	C229	Kenneth W and Sharon L Bailey	PO Box 12	Heislerville	NJ
114112	$11 million in revenues	Commercial fishing	C008	LET Ventures Incorporated (F/V Amanda Tara Inc)	PO Box 727	Manahawkin	NJ
522130	$550 million in assets	Credit Unions	C661	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ
114113	$11 million in revenues	Commercial fishing	C071	Wyoming Boat Corporation	12 Rabbit Run	Cape May	NJ
?	?	?	C075	Seafish Inc	10134 Waterview Dr	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C063	T & P Vessel Inc	210 Hagen Rd	Cape May Court House	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C629	New Sea Rover Inc ITF Blount Seafood Corporation	114 Willow Dr	Cape May	NJ
114112	$11 million in revenues	Commercial fishing	C637	F/V Maude Platt Inc	515 Sanford Rd	Westport	MA
114113	$11 million in revenues	Commercial fishing	C011	D & L Commercial Fish Inc	PO Box 727	Manahawkin	NJ

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10.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this document, the Council consulted with NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. To ensure compliance with NMFS formatting requirements, the advice of NMFS GARFO personnel was sought.

Copies of this document are available from Dr. Christopher M. Moore, Executive Director,
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Dover, DE 19901

Appendix A

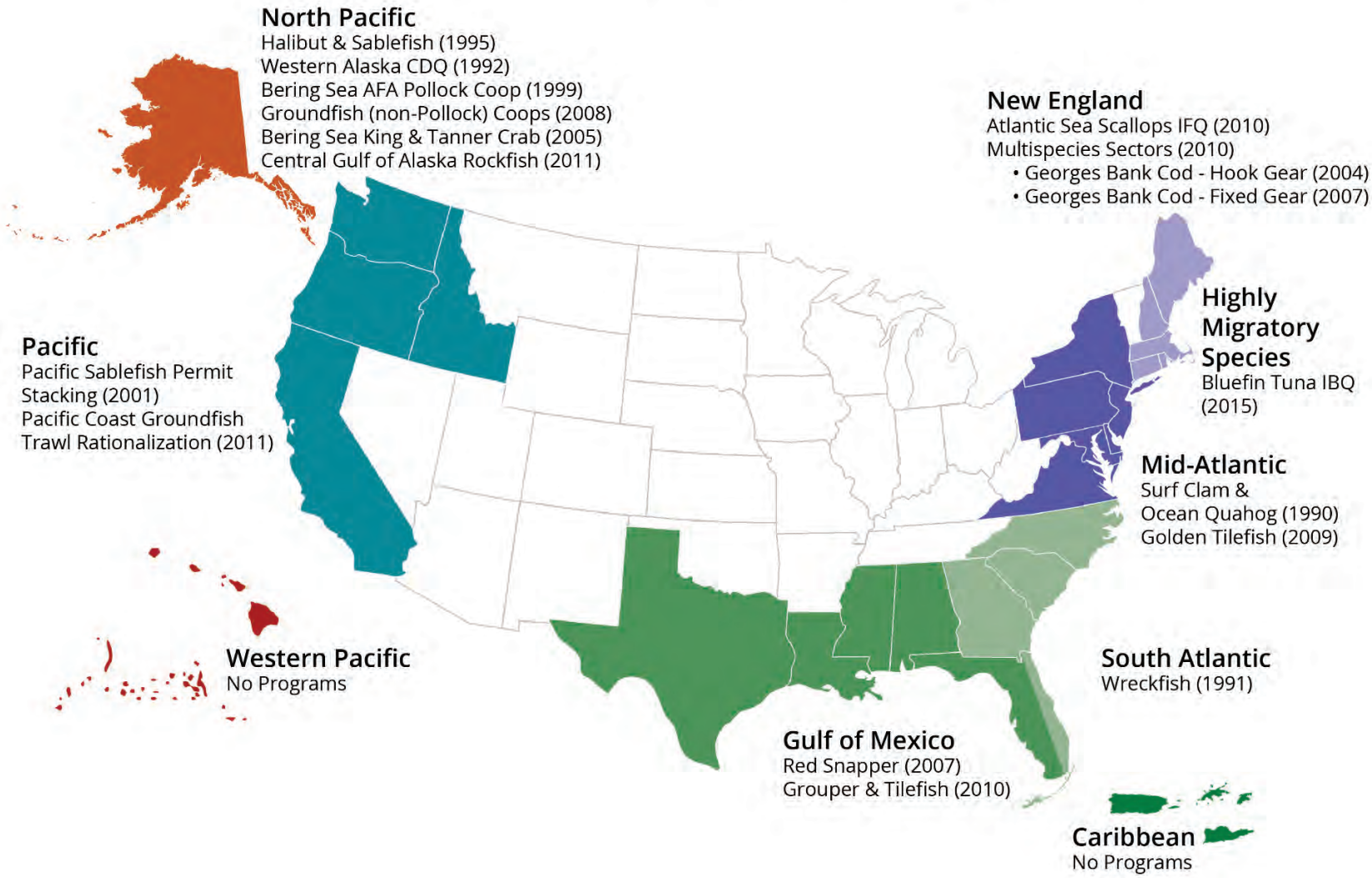
Catch Shares programs in the USA

"Catch shares" is a general term associated with several fisheries management strategies that dedicate a secure share of fish to individual fishermen, cooperatives, or fishing communities for their exclusive use. This appendix presents information on the geographic distribution of the 16 Catch Shares Programs throughout the country. In addition, this appendix provides a brief summary of how these programs are managed.[56]

The information presented below was provided by Lindsay Fullenkamp (NOAA) and Wendy Morrison (NOAA).

[56] For additional information please visit: https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares.

Current Catch Shares Programs



Program	Excessive Share Cap
Atlantic Sea Scallops IFQ	Yes. 2.5% of annual quota pounds[57]; 5% cap on quota share[58]
Multispecies Sectors	Yes. No individual or entity can hold more than 5% of all limited access groundfish permits. Additionally, there is a limit on the aggregated average of all allocated groundfish stocks of 15.5 Potential Sector Contribution (PSC). (Each permit has a history that brings a percentage of quota to the sector the permit enrolls with.) An entity can hold PSC for a single stock in excess of 15.5%, so long as the total holdings do not exceed 232.5 PSC for all 15 species. In other words, because there are 15 groundfish stocks currently allocated to the fishery, the total PSC across all stocks used by a permit holder cannot exceed 232.5 PSC (an average PSC of 15.5% per stock multiplied by 15 groundfish stocks).
Bluefin Tuna IBQ	No. The IBQ program is designed to account for bycatch in directed pelagic longline fisheries. There are various measures in place to curtail the excessive accumulation of share or allocation, such as no permanent sales and all leases contained within the calendar year.
Surf Clam & Ocean Quahog	No
Golden Tilefish	Yes, 49% of the tilefish IFQ total allowable landings
Wreckfish	Yes, 49% of quota share
Red Snapper	Yes, 6% of quota share
Grouper & Tilefish	Yes, quota share caps are: deep water grouper 14.7%, gag 2.3%, other shallow water grouper 7.3%, red grouper 4.3%, and tilefish 12.2%
Pacific Sablefish Permit Stacking	Yes, no individual can hold more than three permits unless meet requirements of grandfather clause.
Pacific Coast Groundfish Trawl Rationalization	Yes For IFQ, quota share limits and quota pound vessel limits (annual and daily). Limits vary by species. The 30+ categories can be found here: http://www.westcoast.fisheries.noaa.gov/publications/fishery_management/trawl_program/accumulation-limits.pdf. For the mothership cooperative program, mothership permit usage limit (no more than 45% of sector allocation). Mothership catcher vessel endorsed permit ownership limit (no more than 20% of the sector allocation).

[57] Quota pounds is the annual amount of fish a participant is allowed to catch, usually defined in terms of total weight. It is often calculated as a percentage of the commercial quota based on a participant's quota shares. It varies according to changes in the commercial quota over time.

[58] Quota share is the percentage of the sector's catch limit to which the holder of quota shares has access to harvest. This percentage is used to calculate the annual allocation, and it is not affected by changes in the catch limit over time.

Halibut & Sablefish	Yes. No one can hold or control more than 0.5%-1.5% of the halibut or sablefish quota shares in various combinations of areas (Gulf of Alaska, Bering Sea, and Aleutians) unless grandfathered in based on original landings history. There are similar restrictions on the amounts of IFQ that can be used on any single vessel.
Western Alaska CDQ	No. The Bering Sea King and Tanner Crab and Halibut Sablefish IFQ have limits on CDQ holdings, but there are no specific excessive share limits in the CDQ Program itself because the allocations were specified by Congress. However, the percentage allocated is reviewed every 10 years.
Bering Sea AFA Pollock Coop	Yes. No entity can harvest more than 17.5% or process more than 30% of the pollock directed fishery allocation.
Groundfish (non-Pollock Coops)	Yes. No single person can hold or use more than 30% of the quota share, unless grandfathered; no single vessel may catch more than 20% of the initial TAC assigned to the non-AFA trawl catcher/processor sector in any given year.
Bering Sea King & Tanner Crab	Yes. No individual or entity may hold/use more than 1-20% of shares (varies by fishery) unless grandfathered. Processors may not possess or use more than 30% of the processor shares for each fishery unless grandfathered, with some limited exceptions for specific fisheries and entities.
Central Gulf of Alaska Rockfish	Yes. There are four types of use caps to limit the amount of rockfish quota share and cooperative fishing quota, unless grandfathered. The caps can be found in Table 1 here: https://alaskafisheries.noaa.gov/sites/default/files/rockfish-faq.pdf

Appendix B

Synthesis Document for

Review of Goals and Objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan

October 2017

Prepared by the Fisheries Leadership & Sustainability Forum

Contents

1 Context for revising goals and objectives

1.1 Project overview

The Council is reviewing and potentially revising goals and objectives for the Surfclam and Ocean Quahog (SCOQ) Fishery Management Plan (FMP) in support of the Council's 2014-2018 Strategic Plan and 2017 Implementation Plan, which identified reviewing and updating FMP goals and objectives as a priority. This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they provide meaningful guidance and are consistent with today's fisheries and management context. The Council will follow a similar process to update goals and objectives for all FMPs.

The Council contracted with the Fisheries Leadership & Sustainability Forum (Fisheries Forum) to support this work by developing a process to support the Council's discussion. Between April and July 2017, Fisheries Forum staff conducted planning conversations with members of the Council's SCOQ Committee, SCOQ Advisory Panel (AP), and additional state agency representatives from states engaged in the fisheries. The Fisheries Forum also reviewed comments provided by the public during scoping hearings held in July 2017.

The Fisheries Forum synthesized this feedback to identify the major ideas and themes of discussion. The Council's Surfclam and Ocean Quahog Fishery Management Action Team (FMAT) reviewed this information and provided recommendations to help guide the Council's discussion. This document combines the Fisheries Forum's synthesis of feedback and the FMAT's recommendations. This information is intended to help frame and focus the Council's review of goals and objectives, and is not intended to be comprehensive of all ideas and perspectives.

The Council will discuss SCOQ FMP goals and objectives at the October 2017 Council meeting (October 10-12, 2017 in Riverhead, New York). At this time, the Council may adopt revisions to SCOQ FMP goals and objectives for inclusion in a public hearing document. The Council and public will have additional opportunities to provide input on this issue.

1.2 Original FMP objectives

The current FMP objectives were adopted in 1988 through Amendment 8 to the SCOQ FMP.

1. Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

1.3 Terms: Goals, objectives, and strategies

As part of the Council's discussion and review of goals and objectives, it will be important to consider the appropriate terminology.

- Goals are broad, big picture, and aspirational. They can help communicate high-level values and priorities for SCOQ management.
- Objectives are more specific and actionable. They can help describe important steps toward accomplishing goals.
- Strategies refer to specific processes, decision points, and actions the Council may take to achieve objectives and support goals.

Goals and objectives are appropriate for the Council's discussion; however, specific management strategies would be appropriate to discuss in the context of other Council actions and will not be part of this discussion. Appendix 2 includes additional examples to help demonstrate the difference between goals, objectives, and strategies.

The four current SCOQ FMP objectives are described in Amendment 8 as objectives and not goals. Other Council FMPs include a combination of goals and objectives. Appendix 3 includes goals and objectives from all Mid-Atlantic FMPs. The Council could choose to consider structuring guidance for the SCOQ FMP in terms of goals, objectives, or both. The FMAT's recommendation includes a set of five goal statements with optional objectives for the Council's consideration.

1.4 MAFMC Strategic Plan

The Council's review of SCOQ FMP goals and objectives supports the Council's Strategic Plan and the 2017 Implementation Plan. The Council's 2014-2018 Strategic Plan identifies reviewing and updating FMP goals and objectives as a priority:

Management Goal: Develop fishery management strategies that provide for productive, sustainable fisheries.

Objective 11: Evaluate the Council's fishery management plans

Strategy 11.2: Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable.

The Council's 2017 Implementation Plan has a list of proposed deliverables including "Review and revise FMP goals and objectives" for the SCOQ FMP.

1.5 Scoping questions

The following questions were included in the Council's July 2017 Scoping Guide for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment to elicit feedback on SCOQ FMP goals and objectives. (The Excessive Shares Amendment will consider excessive shares and FMP goals and objectives as two separate issues.)

- Are the existing objectives appropriate for managing the surfclam and ocean quahog fisheries?

- Are there any objectives that appear outdated or do not reflect the way these fisheries are managed today? If so, how could they be updated?
- Is the intent of each objective clear? If not, how could they be reworded or clarified?
- Should any new goals and/or objectives be added?
- What else should the Council consider during the process of reviewing the objectives for the SCOQ FMP?

2 Feedback on goals and objectives

This section provides an overview of ideas and feedback to help inform the Council's review of SCOQ FMP goals and objectives. Contributors include members of the Council's SCOQ Committee and AP, additional state representatives from states engaged in the fisheries, and stakeholders who provided comments during the Council's July 2017 scoping hearings. Contributors commented briefly on the use of goals and objectives. Additional feedback focused on three themes: 1) relevance of the current objectives, 2) opportunities for revisions, and 3) other issues that may be pertinent to goals and objectives, including Council priorities and unique aspects of the surfclam and ocean quahog fisheries.

2.1 Use of goals and objectives

Managers and advisors who contributed to this project shared the following ideas related to the use of FMP goals and objectives. Most managers and advisors do not refer back to goals and objectives on a regular basis, if at all, but felt they have an important role in the FMP.

Purpose: Goals and objectives provide high level guidance or the "ground rules" for a fishery to ensure it is managed sustainably. Managers and advisors described goals and objectives as foundational to the FMP (e.g., the "blueprint", the "benchmark", the National Standards of the FMP) and the Council's message to the public and industry about how it intends to manage the SCOQ fisheries. Goals and objectives need to be long term and flexible to accommodate changing conditions.

Time horizon: Goals are meant to be long term; objectives are shorter term and a measure of the effectiveness of the set goals. Managers and advisors felt that goals and objectives need to be set for the long term to provide stability and allow the industry to make business decisions. Goals and objectives should also provide managers and the industry with short-term flexibility to address challenges and changing conditions. The appropriate time horizon for goals and objectives can also depend on the circumstances of a fishery and what is needed.

Audience: The intended audience for goals and objectives is a large group that includes the Council, NOAA Fisheries, industry, interested stakeholders, state agencies, non-governmental organizations, and consumers.

2.2 Relevance of the current objectives

Many contributors felt that the current FMP objectives continue to remain relevant and provide meaningful guidance despite significant changes in the surfclam and ocean quahog fisheries. Contributors shared the following reasons why they felt that the current objectives are relevant and appropriate in their current form.

Flexibility: Contributors felt that the objectives have remained relevant through significant biological changes to the SCOQ resources and regulatory changes to the fisheries. They described seeing changes including a shift in the center of biomass to the north, a decrease in fishing activity in the southern end of the range, encountering surfclams among ocean quahogs in deeper water, fleet consolidation after implementation of the Individual Transferable Quota (ITQ) system, and improvements to the science and research supporting management of the SCOQ resources. Contributors felt that the current objectives are sufficiently flexible to accommodate future changes.

Process and intent: Some contributors described their high regard for the wording and intent of the current set of objectives and the process that was originally followed to develop them, as well as their respect for the people who participated.

Performance: Contributors feel that management is working well, that the current objectives are being achieved, and that these objectives define one of the most successfully managed fisheries in the U.S. The objectives reflect the current social and economic circumstances of the fisheries and have minimized government and industry costs. In particular contributors noted that the stock is rebuilt, harvest rates are stable, management uncertainty is low, short-term economic dislocations have been minimized, and regulatory requirements are simplified. Some contributors also noted that safety has been improved.

Stability and consistency: Contributors feel that the current objectives and adoption of the ITQ program have allowed the industry to make efficient planning and business decisions.

Relationships and process: Contributors feel that the current objectives support an efficient and cooperative relationship between the Council, NOAA Fisheries, and industry.

Overall, contributors felt the fisheries are managed well and these original FMP objectives are still relevant. Some felt no changes or updates are necessary to the current objectives, while others felt a refresh and/or some minor wording updates could be helpful to modernize them.

2.3 Opportunities for revisions

Although contributors generally felt that the current SCOQ FMP objectives are still relevant, many suggested opportunities for revisions to ensure that objectives provide meaningful guidance, are clearly worded, and are consistent with the way the fisheries and the Council currently operate. These opportunities include minor wording adjustments as well as more comprehensive structural and content-related revisions.

2.3.1 Minor revisions

The following section describes opportunities identified by contributors for the Council to adjust, update, or clarify specific terms within each objective while preserving its intent. Contributors felt that objectives should be clearly worded to ensure that their intent is clear to managers, stakeholders, and enforcement.

Objective 1
Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.

- Update the objective: The Council could update this objective to reflect the need to maintain rather than “rebuild” the surfclam and ocean quahog resources, which are not overfished or undergoing overfishing. Many contributors felt “rebuild” is an outdated term and that refreshing this objective would acknowledge the progress made and that the SCOQ resources are sustainably managed.
- Clarify specific terms: Some felt it could be helpful to clarify some of the terms in this objective including “stabilizing” and “economic dislocations”. For example, harvest rates are stable and

the quota has been the same for years, so "stabilizing" may be a term that is more reflective of the fisheries in previous years.
- Other considerations: Some felt this objective could take the longevity of the species into consideration.

Objective 2

Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.

- Wording: This objective could acknowledge other relevant aspects of managing the fisheries, such as monitoring.
- Update the objective: Many felt management of the SCOQ fisheries is straightforward and simple, and that this objective might reflect a time when management was more complicated. The Council could update this objective, for example, to focus on maintaining current regulatory requirements.

Objective 3

Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.

- Update the objective: The current objective refers to "bringing harvest capacity into balance", however, contributors felt that harvesting capacity is in alignment with processing and biological capacity in the sustainable SCOQ fisheries. This portion of the objective could be updated to reflect the current fisheries and status of the resources.
- Clarify specific terms: Some weren't clear on the meaning of "economic efficiency" in this objective.

Objective 4

Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

- Clarify specific terms: Some contributors weren't sure what is meant by "unanticipated short term events" because there are not a lot of sudden changes in these fisheries and they are not aware of disruptions or destabilizing events that could occur in today's fisheries. However, some thought that changing environmental conditions could be considered an unanticipated event that could be reflected in this objective.

2.3.2 Structural and content revisions

In addition to the minor revisions above, some contributors felt that there are opportunities for the Council to make more significant structural and/or content-related revisions, ranging from minor to comprehensive changes to the existing objectives. (There may not be a clear delineation between "minor" and "significant" revisions, given that multiple minor revisions to one objective could result in substantial changes).

Order: The objectives could be ordered in terms of importance or priority.

Structure: Objectives could be combined or reorganized. For example, contributors noted that current objectives 3 and 4 both address industry operations.

Comprehensive revisions: The objectives could be completely revised. One example of a complete new set of goals and objectives was provided during the Council's July scoping hearings and is included as appendix to this document (Appendix 4: Example of revised goals and objectives provided by Bumble Bee Seafoods).

2.4 Other issues

The Council could consider how goals and objectives intersect with other Council priorities and unique aspects of the SCOQ resources and fisheries. Contributors identified several topics that are relevant to the SCOQ fisheries and could be relevant to a review of goals and objectives.

Ecosystem and habitat considerations: Implementation of the Council's Ecosystem Approach to Fisheries Management (EAFM) and effective use of the Essential Fish Habitat (EFH) authorities are Council priorities.

Climate and ecosystem changes: Some contributors are concerned about the impacts of ocean acidification to the long-lived, sessile surfclam and ocean quahog resources and feel that the fisheries need to remain adaptable to changing environmental conditions.

Scientific advances: Supporting advances in fishery-independent data collection and modeling that reflect the unique biology of surfclams and ocean quahogs helps to enhance the effective management of the SCOQ resources.

Changes to the fisheries: Contributors commented about the fisheries (both the biomass and fishing activity) shifting north into the geographical bounds of the New England Fishery Management Council and issues with accessible areas in New England due to the Omnibus Habitat Amendment.

Contributors noted other attributes of the fisheries that could be reflected in revised goals and objectives, including surfclams and ocean quahogs being a safe, high quality product. The longevity of the species is another unique attribute. Some also noted the importance of continuing to improve understanding of the resources, fisheries, and dependent communities, and the shared role of managers, industry, and science in the sustainable management of the SCOQ fisheries.

3 FMAT recommendation development

3.1 Context for FMAT recommendations

3.1.1 Outcomes from FMAT discussion

The Surfclam and Ocean Quahog FMAT convened via webinar on September 20, 2017, to consider the feedback obtained from planning conversations and scoping hearings, and to provide recommendations to help guide the Council's review of FMP goals and objectives. The FMAT recognizes that the Council will consider a range of possible options including:

- Making no changes to the current objectives
- Making minor changes or wording adjustments to the current objectives
- Making significant changes to the current objectives
- Developing a new set of revised objectives

The FMAT's discussion resulted in two outcomes to help support the Council's consideration of these options. The FMAT recommends that the Council discuss these two outcomes and determine how to proceed.

> Outcome 1: Discussion questions
> The FMAT developed a set of discussion questions (Section 3.2.1) to help guide the Council's discussion of SCOQ FMP goals and objectives and consideration of the options above.
>
> Outcome 2: Revised goals and objectives
> The FMAT recommended a set of goal statements and objectives (Section 3.2.2) for the Council's consideration of revised goals and/or objectives.

3.1.2 Rationale for FMAT recommendations

The FMAT developed Outcomes 1 and 2 after considering the guidance provided by the Council's 2014-2018 Strategic Plan (Section 1.4), the discussion questions used to elicit feedback from the public during the July 2017 scoping hearings (Section 1.5), and the feedback obtained from planning conversations and public comment (Section 2). The FMAT concluded that while the current SCOQ FMP objectives were carefully considered at the time they were developed, they should be revised to provide more useful guidance to the Council for the following reasons.

Acknowledge achievement and success. The current SCOQ FMP objectives reflect the intended and desired outcomes of Amendment 8. Aspects of these objectives have already been achieved. Revising FMP goals and objectives would acknowledge the improvements that have been made to the management of the SCOQ fisheries, recognize what is working well, and focus on maintaining and sustaining these improvements.

Clarify intent. Goals and objectives are an important public statement about what an FMP is trying to accomplish, and should be clear to stakeholders of all backgrounds. The current objectives and specific terms may not be clear to those who were not involved in the management process at the time

Amendment 8 was developed. Terms may also be confusing because they are not defined or have multiple definitions (e.g., economic efficiency). In addition, the current objectives are complicated and combine topics (e.g., Objective 1 addresses biology and economics). Revising goals and objectives would simplify and focus this guidance to clarify the Council's intent while still acknowledging the need to balance different objectives.

Provide flexible long-term guidance. The current SCOQ FMP objectives are short-term and focus on implementation of the ITQ program. Revising goals and objectives is an opportunity for the Council to develop broad, high-level guidance that describes the Council's longer-term intent for the fisheries, and is flexible to remain relevant over time and through changes to the fisheries.

Clearly identify FMP-level guidance. In addition to setting FMP goals and objectives, the Council may identify goals and/or objectives for specific amendments. For example, the Council identified objectives for Amendment 10 to the SCOQ FMP in 1998 (see Question 6 below). Furthermore, fisheries and FMPs evolve over time, and this can lead to a disconnect between the stated goals and/or objectives for an FMP and the way a fishery currently operates. Through the process of reviewing and revising FMP goals and objectives, the Council should clearly identify FMP-level guidance that is intended to carry forward through future Council actions, and ensure that this guidance reflects the current state of a fishery.

3.2 FMAT recommendations

3.2.1 Outcome 1: Discussion questions

The FMAT identified several discussion questions that may help inform the Council's consideration of goals and objectives for the SCOQ FMP.

Question 1: How does the Council want to structure guidance for the SCOQ FMP?
The Council could choose to structure guidance for the SCOQ FMP in the form of goals, objectives, or both. The FMAT feels that goals would provide valuable long-term guidance, but notes that this is an important structural consideration for the Council to discuss. The FMAT's recommendations include both goals and objectives but the FMAT could provide these in a different format.

Question 2: What does the Council view as the time frame for goals and objectives?
Time frame is an important consideration related to Question 1. Goals and objectives for biological sustainability may be essentially permanent, but other guidance may need to be adjusted over time. The FMAT suggests the Council consider the time frame for long-term guidance, how frequently the Council is likely to revisit FMP goals and objectives, and whether reviews are likely to occur as needed or on a set schedule. The FMAT considered how frequently the Council might revisit goals and objectives (for example, every 10 years, with every other iteration of the Council's Strategic Plan, or in conjunction with ITQ reviews) though did not endorse or recommend a time frame for review.

Question 3: What is the Council's intent for reviewing and potentially revising goals and objectives?
The FMAT suggests the Council consider whether goals and objectives are meant to maintain the current state of the fisheries or look ahead to the future. The FMAT's recommendations for revised goals and objectives (Section 3.2.2) reflect the current fisheries; the development of

forward-looking goals and/or objectives that imply change to the fisheries would be the purview of the Council.

Question 4: How could the Council's review of FMP goals and objectives acknowledge what is working well in the SCOQ fisheries?

Feedback from planning conversations and public comments emphasized that the current objectives are still viewed as relevant and that the fisheries are performing well, though opinions differed on whether the current objectives should be revised. The FMAT felt that revising goals and objectives would refocus FMP guidance and acknowledge improvements to the fisheries that should be maintained. The Council should consider how FMP goals and objectives can most effectively acknowledge what is working well in the SCOQ fisheries.

Question 5: How does the Council want to address measuring the performance of FMP goals and objectives?

The Council's 2014-2018 Strategic Plan states: *Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable*. The FMAT suggests that the Council discuss this issue. In the future, the Council could request that FMATs give further consideration to measuring the performance of goals and objectives. Some FMAT members indicated that the goals recommended in Section 3.2.2 could be measured using quantitative and/or qualitative metrics.

Question 6: Does the Council want to acknowledge the Maine mahogany quahog fishery in FMP goals and objectives?

Amendment 10 to the SCOQ FMP in 1998 recognizes and provides for the continuation of a small fishery for ocean quahogs in federal waters off the state of Maine. Amendment 10 recognizes the overall objectives of the SCOQ FMP established by Amendment 8 and specifies an additional set of objectives[1]. The FMAT suggests that the Council consider whether this fishery should be acknowledged in overall FMP objectives. The FMAT also notes that the existence of amendment-specific objectives reinforces the need to clearly identify overall FMP objectives as guidance that should be carried forward into future actions.

Question 7: If the Council chooses to consider the draft goals and objectives proposed by the FMAT (Outcome 2), is the wording appropriate?

The FMAT and members of the public noted that the wording of goals and objectives is very important. The FMAT suggests the Council carefully consider the wording of each proposed goal and objective, possible interpretations and consequences, and the balance among goals and objectives as a whole.

[1] The additional objectives specifically for Amendment 10 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP) are:

1. Protect the public health and safety by the continuation of the State of Maine's PSP (Paralytic Shellfish Poisoning) monitoring program for ocean quahogs harvested from the historical eastern Maine fishery.
2. Conserve the historical eastern Maine portion of the ocean quahog resource.
3. Provide a framework that will allow the continuation of the eastern Maine artisanal fishery for ocean quahogs.
4. Provide a mechanism and process by which industry participants can work cooperatively with Federal and State management agencies to determine the future of the historical eastern Maine fishery.

3.2.2 Outcome 2: Revised goals and objectives

The FMAT developed the following goal statements, optional objectives, and questions for the Council's consideration. These goals are derived from the existing SCOQ FMP objectives, statutory requirements of the Magnuson-Stevens Act (MSA), and feedback from planning conversations and public comment; and are reframed as overarching long-term aspirations. The FMAT notes that several long-term goals are embedded within the current SCOQ FMP objectives. The proposed goals and objectives are an effort to distinguish between longer-term goals and shorter-term objectives, simplify and clarify the wording and intent of the current objectives, and provide meaningful long-term guidance. The FMAT believes that the proposed goals are longer-term and would not need to be revised frequently. The objectives, though shorter-term, describe ongoing practices to maintain rather than action items to be completed.

This section includes a summary of the five goals and supporting objectives recommended by the FMAT, followed by a discussion of the FMAT's rationale for each proposed objective and an explanation of how the proposed goal and/or objectives relate to the current FMP objectives (e.g., an update, reorganization, or new content).

Summary of revised goals and objectives

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.
- Objective 2.1: Promote compatible regulations between state and federal entities.
- Objective 2.2: Promote coordination with the New England Fishery Management Council.
- Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.
- Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.
- Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.
- Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.
- Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

Goal 1: Biological sustainability

> Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

FMAT Discussion

Goal 1 is an update and simplification of the "conserve and rebuild" language from current Objective 1 (*Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.*) This revision reflects the current status of the stocks, which are not overfished, undergoing overfishing, or undergoing rebuilding; and is versatile to provide guidance under all resource scenarios. This goal and the two objectives are consistent with the requirements of the MSA and are worded in a way that is more straightforward and understandable to the public.

The Council's recent review of summer flounder FMP goals and objectives may provide useful context for this proposed goal. The Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) considered a similarly worded goal for biological sustainability during their December 2015 review of summer flounder FMP goals and objectives, as part of the Comprehensive Summer Flounder Amendment. The FMAT for this amendment initially recommended a goal ("Ensure the biological sustainability of the summer flounder resource in order to maintain a sustainable summer flounder fishery") paired with two objectives ("Achieve and maintain a sustainable spawning stock biomass" and "Achieve and maintain a sustainable rate of fishing mortality.") The Council and Board recommended merging the two proposed objectives into a single objective that draws on the language of National Standard 1 to specifically address the topics of yield and avoiding overfishing, as follows: "Prevent overfishing, and achieve and maintain sustainable spawning stock biomass levels that promote optimum yield in the fishery." This proposed wording also builds on one of the original objectives for the FMP (Objective 3: Improve the yield from the fishery.) The Comprehensive Summer Flounder Amendment is ongoing and goals and objectives for this FMP have not yet been finalized.

Questions

- Does the Council want to develop one or more objectives related to this goal? For example, objectives could include "Maintain a sustainable biomass" and "Maintain a sustainable rate of fishing mortality." The FMAT notes that these objectives could reinforce and make explicit what is required by the MSA, though the FMAT feels adding objectives is not necessary.
- The Maine mahogany quahog fishery was developed after the current objectives were established. Does the Council want to explicitly acknowledge the Maine mahogany quahog fishery in goals and objectives? If so, where is the appropriate place to do so? An optional objective could read: Maintain the Maine mahogany quahog fishery.

Goal 2: Simplicity and efficiency

> Goal 2: Maintain a simple and efficient management regime.
> Objective 2.1: Promote compatible regulations between state and federal entities.
> Objective 2.2: Promote coordination with the New England Fishery Management Council.
> Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

FMAT Discussion

Goal 2 is a simplification and reorganization of the language in current Objective 2 (*Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.*) The words "maintain" and "promote" recognize that these aspects of managing the fisheries have been improved over time.

Objectives 2.1 and 2.2 are new ideas. The FMAT felt that promoting compatibility between state and federal regulations (Objective 2.1) is important "common sense" guidance for supporting simple and efficient management. Objective 2.2 was added in response to planning conversations and public comments and refers to the Council's interest in coordinating and having a presence when the New England Council develops management measures that may impact the SCOQ fisheries.

Questions

Current Objective 2 recognizes specific aspects of the management process for which managers should minimize the government and private cost of administering and complying with requirements. These include regulatory, reporting, enforcement, and research requirements.

- Does the Council want to continue to recognize these specific requirements, for example by adding them to Objective 2.3?

Goal 3: Stability

> Goal 3: Manage for stability in the fisheries.
> Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

FMAT Discussion

This goal is a simplification and reorganization that focuses on the overarching value of stability by drawing on the language of two current objectives, Objective 3 (*Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry*) and Objective 4 (*Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.*) Specifically, this overarching goal of stability addresses

the language of Objectives 3 and 4 referring to balancing harvesting, processing, and biological capacity; efficient utilization of capital resources, and long-term industry planning and investment needs.

The FMAT discussed the most appropriate terminology to describe stakeholders in the management of the surfclam and ocean quahog resources. FMAT members noted that the current objectives use the terms "industry" and "industry participants" and refer to both the harvesting and processing sectors. The FMAT also discussed whether the term "industry" explicitly includes the processing sector, and the relationship of the Council's management decisions to the processing sector. The FMAT suggested the phrase "surfclam and ocean quahog fisheries and fishing communities" as a simple and more encompassing term that includes all components of the SCOQ fishery.

Goal 4: Flexibility

> Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.
>
> Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.
>
> Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

FMAT Discussion

Goal 4 is an update and revision of Objective 4 (*Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs*) and focuses on the values of flexibility and adaptability. Goal 4 and Objectives 4.1 and 4.2 also acknowledge issues identified during planning conversations, including concerns about changing environmental conditions and the Council's implementation of an ecosystem approach to fisheries management.

Objective 4.1 is a new idea recommended by the FMAT. The Council is able to comment on proposed plans (e.g., wind energy development) that may impact fish habitat. The Mid-Atlantic Council also has a representative to the Mid-Atlantic Regional Planning Body. The FMAT recommended Objective 4.1 to recognize the opportunity for the Council to engage more proactively in ocean planning processes to consider and communicate the SCOQ fisheries' interests. The FMAT also recommended including the reference to long-term changes in Objective 4.2 to recognize the need to respond to both short and long-term changes, as current Objective 4 refers only to short term events.

Goal 5: Information

> Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.
>
> Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

FMAT Discussion

Goal 5 and Objective 5.1 are new and are not based on any of the current SCOQ FMP objectives. This goal and objective are based on feedback from planning conversations and scoping comments. The FMAT and public participants in the FMAT's webinar discussed the use of the words "support" and "promote" in Goal 5. Public participants noted that the SCOQ industry has been proactive in supporting

and investing in research, and preferred the word “support” for Goal 5. The FMAT agreed that the use of the word “support” in Goal 5 is consistent with the Council’s role and responsibilities relative to science, monitoring, and data collection. The use of “promote” in Objective 5.1 recognizes that the Council can encourage and provide guidance to partners and other entities to focus research that will benefit management.

4.1 Appendix 1: Contributors

The Fisheries Forum requested input from members of the Council's SCOQ Committee and AP and additional state agency representatives in order to develop this document and to inform the FMAT's recommendations. Contributors shared feedback on fishery management plan goals and objectives for SCOQ management to help focus and frame the Council's discussion of this issue.

Fisheries Forum staff conducted 18 informal planning calls with Committee and AP members and state representatives involved in surfclam and ocean quahog management. In addition, Council staff collected public comments on this issue during scoping hearings held in July 2017.

The following individuals contributed to the development of this document through short planning calls.

Surfclam and Ocean Quahog Committee members

- Peter deFur, Appointee (VA)
- Peter Hughes, Appointee (NJ)
- Roger Mann, Appointee (VA)
- Stew Michels, Delaware Division of Fish & Wildlife
- Steve Heins, New York Department of Environmental Conservation
- Howard King, Appointee (MD)
- Wes Townsend, Appointee (DE)
- Patricia Bennett, U.S. Coast Guard
- Mike Ruccio, NOAA Fisheries
- Doug Potts, NOAA Fisheries

Surfclam and Ocean Quahog AP members

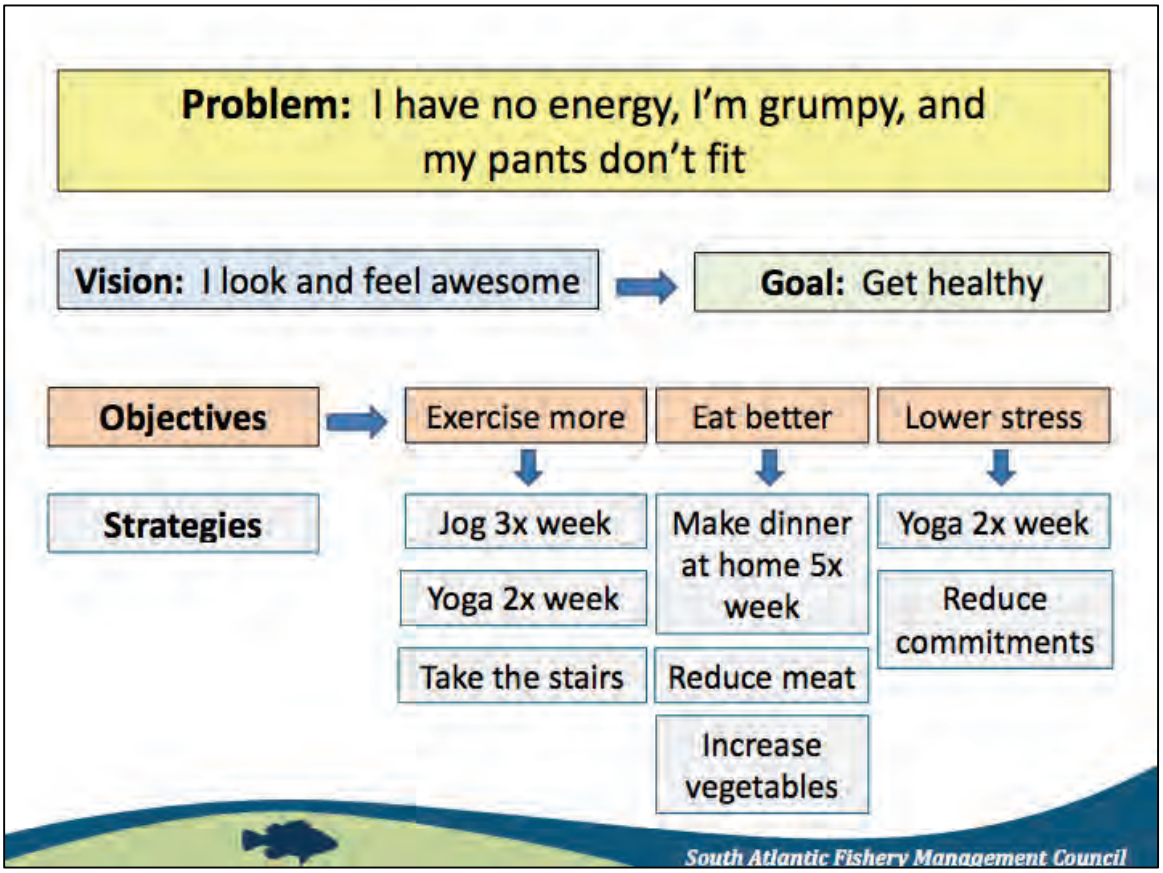
- Thomas Alspach (MD)
- Thomas Dameron (PA)
- Peter Himchak (NJ)
- Sam Martin (NJ)
- Joseph Myers (NJ) with Jeff Pike and Mike Kraft
- David Wallace (MD)

State agency representatives

- Tom Baum and Jeff Normant, New Jersey Division of Fish & Wildlife
- Terry Stockwell, Maine Department of Marine Resources

4.2 Appendix 2: South Atlantic Council example: Goals, objectives, and strategies

This diagram includes examples of goals, objectives, and strategies, and is excerpted from a staff presentation on strategic planning from the South Atlantic Fishery Management Council's March 2013 Council Visioning Workshop.



The full presentation is available online:
http://cdn1.safmc.net/wp-content/uploads/2016/11/28101424/2BB_Attach2b_StrategicPlanningPres-1.pdf

Additional information about the Council's Snapper-Grouper Visioning Process, and resources from past meetings, are available on the council's website.
http://www.safmc.net/resource-library/council-visioning-project

4.3 Appendix 3: Mid-Atlantic Fishery Management Council FMP goals and objectives

Summer Flounder, Scup, Black Sea Bass

1. Reduce fishing mortality in the summer flounder, scup, and black sea bass fisheries to assure that overfishing does not occur.
2. Reduce fishing mortality on immature summer flounder, scup, and black seabass to increase spawning stock biomass.
3. Improve the yield from the fishery.
4. Promote compatible management regulations between state and Federal jurisdictions.
5. Promote uniform and effective enforcement of regulations.
6. Minimize regulations to achieve the management objectives stated above.

Bluefish

1. Increase understanding of the stock and of the fishery.
2. Provide the highest availability of bluefish to U.S. fishermen while maintaining, within limits, traditional uses of bluefish.
3. Provide for cooperation among the coastal states, the various regional marine fishery management councils, and federal agencies involved along the coast to enhance the management of bluefish throughout its range.
4. Prevent recruitment overfishing.
5. Reduce the waste in both the commercial and recreational fisheries.

Spiny dogfish

1. Reduce fishing mortality to ensure that overfishing does not occur.
2. Promote compatible management regulations between state and Council jurisdictions and the US and Canada.
3. Promote uniform and effective enforcement of regulations.
4. Minimize regulations while achieving the management objectives stated above.
5. Manage the spiny dogfish fishery so as to minimize the impact of the regulations on the prosecution of other fisheries, to the extent practicable.
6. Contribute to the protection of biodiversity and ecosystem structure and function.

Squid, Mackerel, Butterfish

1. Enhance the probability of successful (i.e., the historical average) recruitment to the fisheries.
2. Promote the growth of the U.S. commercial fishery, including the fishery for export.
3. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP.
4. Provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy.
5. Increase understanding of the conditions of the stocks and fisheries.
6. Minimize harvesting conflicts among U.S. commercial, U.S. recreational, and foreign fishermen.

Surfclam and Ocean Quahog

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of surfclam and ocean quahog management to minimize the government and private cost of administering and complying with

regulatory, reporting, enforcement, and research requirements of surfclam and ocean quahog management.

3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of surfclam and ocean quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

Tilefish

The overall goal of this FMP is to rebuild tilefish so that the optimum yield can be obtained from this resource. To meet the overall goal, the following objectives are adopted:

1. Prevent overfishing and rebuild the resource to the biomass that would support MSY.
2. Prevent overcapitalization and limit new entrants.
3. Identify and describe essential tilefish habitat.
4. Collect necessary data to develop, monitor, and assess biological, economic, and social impacts of management measures designed to prevent overfishing and to reduce bycatch in all fisheries.

4.4 Appendix 4: Example of revised goals and objectives provided by Bumble Bee Seafoods

The following is an excerpt from scoping comments provide in a letter from Bumble Bee Seafoods to the Mid-Atlantic Fishery Management Council, July 12, 2017. These comments are the only example of a new full set of goals and objectives suggested by contributors to this project, and are included in this document for reference.

Bumble Bea Seafood supports the Council's effort to revise the goals and objectives for the OQSC FMP as they are not consistent with today's fishery and management issues. Provided below is a list of revised/rewritten goals and objectives which we believe more accurately reflect today's fishery:

1. Conserve and sustainably manage the Atlantic surf clam and ocean quahog resources throughout the management unit to prevent overfishing and ensure that the resource is not overfished while achieving optimum yield from the resource.
2. Promote opportunities for government and industry scientific research, especially into the effects of warming ocean temperatures and changing ocean conditions on the OQSC resources, and research necessary for sound management decisions.
3. Provide a simplified management regime and regulatory framework that minimize government and industry cost while allowing participants to achieve economic efficiency including efficient utilization of capital resources by industry.
4. Promote compatible management regulations between state and Councils jurisdiction.
5. Strengthen coordination between the New England Fishery Management Council and the Mid-Atlantic Fishery Management Council so that actions by one Council do not negatively impact the ability of industry to achieve optimum yield.

Appendix C

Table 1. Essential Fish Habitat descriptions for federally-managed species/life stages in the U.S. Northeast Shelf Ecosystem that are vulnerable to bottom tending fishing gear.

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
American plaice	juvenile	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 150	Fine grained sediments, sand, or gravel
American plaice	adult	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 175	Fine grained sediments, sand, or gravel
Atlantic cod	juvenile	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	25 - 75	Cobble or gravel
Atlantic cod	adult	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	10 - 150	Rocks, pebbles, or gravel
Atl halibut	juvenile	GOM and GB	20 - 60	Sand, gravel, or clay
Atl halibut	adult	GOM and GB	100 - 700	Sand, gravel, or clay
Barndoor skate	juvenile/ adult	Eastern GOM, GB, SNE, Mid-Atlantic Bight to Hudson Canyon	l0-750, most < 150	Mud, gravel, and sand
Black sea bass	juvenile	GOM to Cape Hatteras, NC, including estuaries from Buzzards Bay to Long Island Sound, Gardiners Bay, Barnegat Bay to Chesapeake Bay, Tangier/ Pocomoke Sound, and James River	1 - 38	Rough bottom, shellfish/ eelgrass beds, manmade structures, offshore clam beds, and shell patches
Black sea bass	adult	GOM to Cape Hatteras, NC, including Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay, and James River	20 - 50	Structured habitats (natural and manmade), sand and shell substrates preferred
Clearnose skate	juvenile/ adult	GOM, along continental shelf to Cape Hatteras, NC, including the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay mainstem	0 – 500, most < 111	Soft bottom and rocky or gravelly bottom
Haddock	juvenile	GB, GOM, and Mid-Atlantic south to Delaware Bay	35 - 100	Pebble and gravel
Haddock	adult	GB, eastern side of Nantucket Shoals, and throughout GOM	40 - 150	Broken ground, pebbles, smooth hard sand, and smooth areas between rocky patches
Little skate	juvenile/ adult	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes estuaries from Buzzards Bay south to mainstem Chesapeake Bay	0-137, most 73 - 91	Sandy or gravelly substrate or mud
Ocean pout	eggs	GOM, GB, SNE, and Mid-Atlantic south to Delaware Bay, including the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay and Cape Cod Bay	<50	Generally sheltered nests in hard bottom in holes or crevices
Ocean pout	juvenile	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, and Cape Cod Bay	< 50	Close proximity to hard bottom nesting areas

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Ocean pout	adult	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, MA Bay, Boston Harbor, and Cape Cod Bay	< 80	Smooth bottom near rocks or algae
Pollock	adult	GOME, GB, SNE, and Mid-Atlantic south to New Jersey and the following estuaries: Passamaquoddy Bay, Damariscotta R., MA Bay, Cape Cod Bay, Long Island Sound	15 – 365	Hard bottom habitats including artificial reefs
Red hake	juvenile	GOM, GB, continental shelf off SNE, and Mid-Atlantic south to Cape Hatteras, including the following estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, and Chesapeake Bay	< 100	Shell fragments, including areas with an abundance of live scallops
Red hake	adult	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras, these estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, Delaware Bay, and Chesapeake Bay	10 - 130	In sand and mud, in depressions
Redfish	juvenile	GOM, southern edge of GB	25 - 400	Silt, mud, or hard bottom
Redfish	adult	GOM, southern edge of GB	50 - 350	Silt, mud, or hard bottom
Rosette skate	juvenile/ adult	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33-530, most 74-274	Soft substrate, including sand/mud bottoms
Scup	juvenile/ adult	GOM to Cape Hatteras, NC, including the following estuaries: MA Bay, Cape Cod Bay to Long Island Sound, Gardiners Bay to Delaware inland bays, and Chesapeake Bay	0-38 for juv 2-185 for adult	Demersal waters north of Cape Hatteras and inshore estuaries (various substrate types)
Silver hake	juvenile	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, ME, MA Bay to Cape Cod Bay	20 – 270	All substrate types
Summer Flounder	juvenile/ adult	GOM to Florida – estuarine and over continental shelf to shelf break	0-250	Demersal/estuarine waters, varied substrates. Mostly inshore in summer and offshore in winter.
Smooth skate	juvenile/ adult	Offshore banks of GOM	31–874, most 110-457	Soft mud (silt and clay), sand, broken shells, gravel and pebbles
Thorny skate	juvenile/ adult	GOM and GB	18-2000, most 111-366	Sand, gravel, broken shell, pebbles, and soft mud
Tilefish	juvenile/ adult	Outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary	100 - 300	Burrows in clay (some may be semi-hardened into rock)
White hake	juvenile	GOM, southern edge of GB, SNE to Mid-Atlantic and the following estuaries: Passamaquoddy Bay, ME to Great Bay, NH, Massachusetts Bay to Cape Cod Bay	5 - 225	Seagrass beds, mud, or fine grained sand
Winter flounder	adult	GB, inshore areas of GOM, SNE, Mid- Atlantic south to Delaware Bay and the estuaries from Passamaquoddy Bay, ME to Chincoteague Bay, VA	1 - 100	Mud, sand, and gravel

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Winter skate	juvenile/ adult	Cape Cod Bay, GB, SNE shelf through Mid-Atlantic Bight to North Carolina; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 371, most < 111	Sand and gravel or mud
Witch flounder	juvenile	GOM, outer continental shelf from GB south to Cape Hatteras	50 - 450 to 1500	Fine grained substrate
Witch flounder	adult	GOME, outer continental shelf from GB south to Chesapeake Bay	25 - 300	Fine grained substrate
Yellowtail flounder	adult	GB, GOM, SNE and Mid-Atlantic south to Delaware Bay and these estuaries: Sheepscot River and Casco Bay, ME, MA Bay to Cape Cod Bay	20 - 50	Sand or sand and mud

Compare Results

Old File:

SC:OQ ESPHD Revised for June meeting.pdf

222 pages (6.82 MB)
8/28/19, 12:39:45 PM

versus

New File:

Excessive Shares Comment Period Public Hearing Document 8:1 - 9:14:2019.pdf

231 pages (6.73 MB)
8/9/19, 10:12:20 AM

Total Changes

1868

Content

807 Replacements
314 Insertions
276 Deletions

Styling and Annotations

471 Styling
0 Annotations

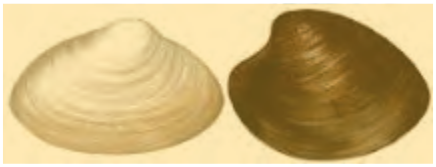
Go to First Change (page 1)

ATLANTIC SURFCLAM AND OCEAN QUAHOG EXCESSIVE SHARES AMENDMENT

PUBLIC HEARING DOCUMENT

COMMENT PERIOD

August 1 – September 14, 2019



Prepared by the
Mid-Atlantic Fishery Management Council
in cooperation with
the National Marine Fisheries Service

INSTRUCTIONS FOR PROVIDING PUBLIC COMMENTS

The Mid-Atlantic Fishery Management Council (MAFMC or Council) will collect public comments on the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment during 4 public hearings to be held during a 45-day Public comment period from August 1 to September 14, 2019. Written comments may be sent by any of the following methods:

1. **Online** at www.mafmc.org/comments/scoq-excessive-shares-amendment
2. **Email** to the following address: jmontanez@mafmc.org
3. **Mail or Fax** to:

Chris Moore, Ph.D., Executive Director
Mid-Atlantic Fishery Management Council
North State Street, Suite 201
Dover, DE 19901
FAX: 302.674.5399

If sending comments through the mail, please write "SCOQ Excessive Shares Amendment Comments" on the outside of the envelope. If sending comments through email or fax, please write "SCOQ Excessive Shares Amendment Comments" in the subject line.

All comments, regardless of submission method, will be compiled for review and consideration by the Council. **Please do not submit the same comments through multiple channels.**

Interested members of the public are encouraged to attend any of the following 4 public hearings and to provide oral or written comments:

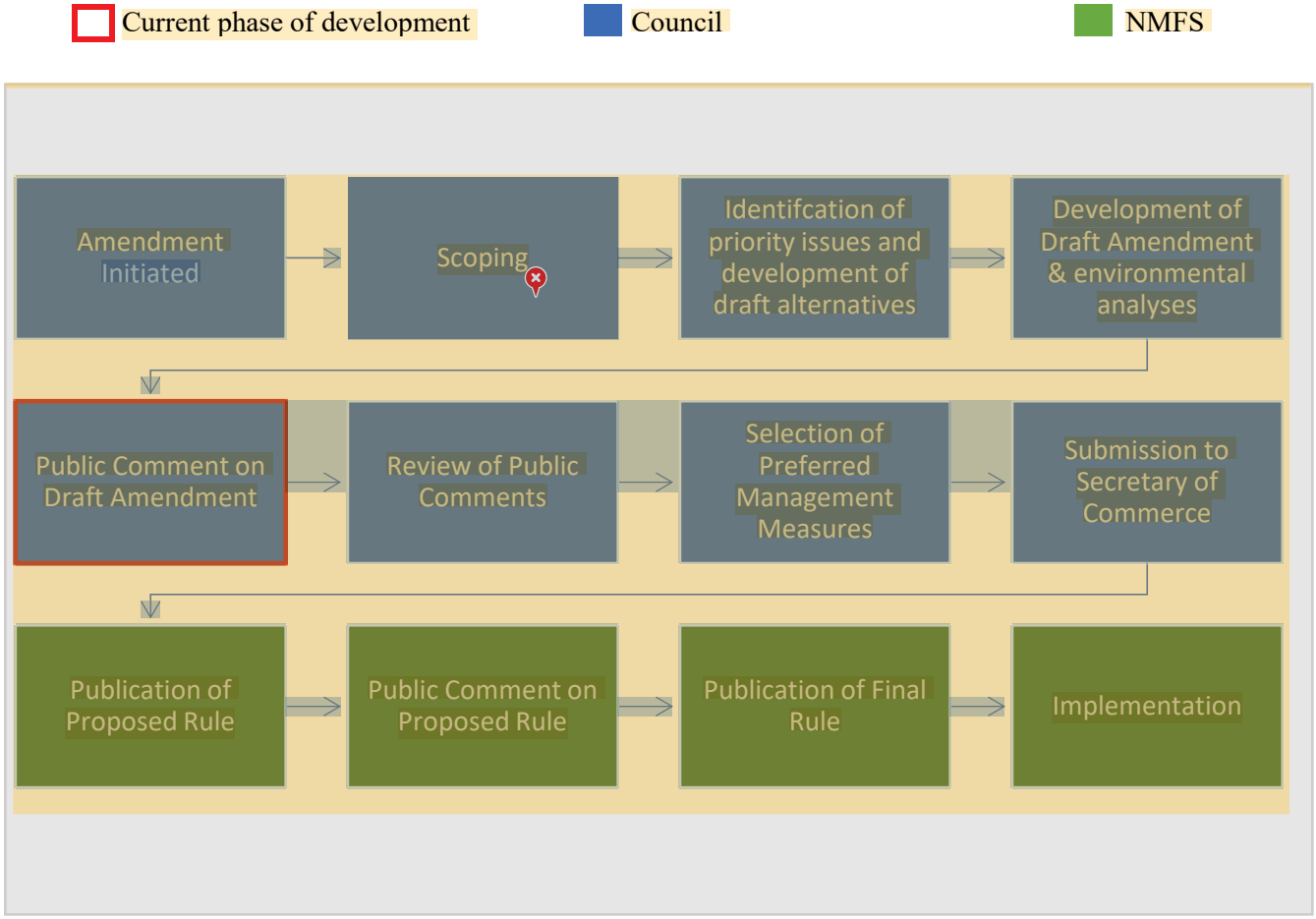
Date and Time	Location
Thursday, Aug 1, 2019; 6:30 pm	**The Grand Hotel** 1045 Beach Avenue, Cape May, NJ 08204. Telephone: (609) 884-5611.
Wednesday, Aug 7, 2019; 6:30 pm	**Webinar** This meeting will be conducted via webinar accessible via the internet. Connection information to be posted at www.mafmc.org/council-events prior to the meeting.
Monday, Sept 9, 2019; 6:30 pm	**LaQuinta Inns & Suites** 300 S. Salisbury Blvd., Salisbury, MD 21801. Telephone: (410) 546-4400
Tuesday, Sept 10, 2019; 6:30 pm	**Radisson Hotel Providence Airport** 2081 Post Rd, Warwick, RI 02886. Telephone: (401) 739-3000.

For additional information and updates, please visit: http://www.mafmc.org/actions/scoq-excessive-shares-amendment. If you have any questions, please contact:

José Montañez, Ph.D.,
Fishery Management Specialist
Mid-Atlantic Fishery Management Council
302.526.5258

WHAT HAPPENS NEXT?

This document supports a public comment period scheduled from August 1, 2019 to September 14, 2019. Following public hearings and the comment period, written and oral comments will be compiled and provided to the Council for review. These comments will be considered prior to taking final action on the amendment, which is tentatively scheduled for December 2019. The Council's recommendations are not final until they are approved or partially approved by the Secretary of Commerce through the National Marine Fisheries Service, so the timing of full implementation of this action will depend on the federal rulemaking timeline. This rulemaking process is expected to occur in 2020, with revised measures possibly effective during the 2020 fishing year.



EXCESSIVE SHARES AMENDMENT TO THE ATLANTIC SURFCLAM AND OCEAN QUAHOG FISHERY MANAGEMENT PLAN

(Includes Draft Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis)

DRAFT AS OF 07/16/2019

Mid-Atlantic Fishery Management Council

in cooperation with

the National Marine Fisheries Service (NMFS)

Draft adopted by MAFMC: 06-04-2019
Final adopted by MAFMC: MM-DD-YYYY
Draft submitted to NOAA: MM-DD-YYYY
Final approved by NOAA: MM-DD-YYYY

Council Address	NMFS Address
Mid-Atlantic Fishery Management Council	Greater Atlantic Regional Fisheries Office
800 North State Street, Suite 201	55 Great Republic Drive
Dover, DE 19901	Gloucester, MA 01930

1.0 EXECUTIVE SUMMARY

This document was prepared by the Mid-Atlantic Fishery Management Council (MAFMC or Council) in consultation with the National Oceanic and Atmospheric Administrations (NOAA) National Marine Fisheries Service (NMFS). This document was developed in accordance with all applicable laws and statutes described in section 8.0.

The purpose of this action (amendment)[1] is to consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog individual transferrable quota (ITQ) privileges. For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap that is intended to prevent a firm or entity from exerting market power.[2] The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

This action includes measures to revise the process for specifying multi-year management measures, to require periodic review of the excessive shares cap level, and allow adjustments to be made under the frameworkable provisions of the FMP. In addition, this amendment considers revisions to some or all of the current management objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP).

1.1 Summary of Alternatives

This document details management alternatives being considered and their expected impacts on several components of the environment. The alternatives are summarized in Boxes ES-1 to ES-4 below, and described in more detail in sections 5.1 to 5.5.

[1] Amendment number to be added after final action.
[2] An outcome of obtaining market power could be pricing power in either output (product) or input (factor) markets or the ability to disrupt other firms or entities from participating in the market.

Box ES-1. Summary of the excessive shares alternatives. ***The Council needs to choose a specific model and affiliation level to implement and/or monitor any particular excessive shares cap level.***

Alternatives	Summary of Alternative
Alternative 1: (No Action/*Status Quo*)	No limit or definition of an excessive share is included in the FMP.
Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)	A single cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership[3] with unlimited leasing of annual allocation (cage tags) throughout the year (Note: all excessive share alternatives are applicable throughout the year). Since the cap is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit.
Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017	The single quota share caps would be based on the highest level of quota share held by an individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 2.2: Quota share cap at 49%	The single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).
Sub-Alternative 2.3: Quota share cap at 95%	The single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). A 95% cap could potentially result in a minimum (if fully consolidated) of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%).
Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)	A cap based on combined values for quota share ownership plus leasing of annual allocation (cage tags) would be established separately for surfclams and ocean quahogs. Since the cap is based on ownership plus leasing of annual allocation (cage tags), it accounts for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit.
Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017	The combined caps would be based on the highest level of quota share ownership plus leasing of annual allocation (cage tags) by an individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 3.2: Combined cap at 40%	The combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE (Center for Independent Experts) review. A 40% cap could potentially result in a minimum (if fully consolidated) of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%).
Sub-Alternative 3.3: Combined cap at 49%	The combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).

[3] **Quota Share Ownership:** The quota share held by an individual or entity. In a manner of speaking, "ownership" usually represents a property right in perpetuity or for as long as the owner wants. However, under MSA there are some important policy issues with respect to duration in the design of limited access privilege programs (e.g., ITQs). The MSA stipulates that limited access privileges may be revoked or limited in accordance with the Act, they do not confer rights of compensation, and they do not create any ownership of a fish before it is harvested [Section 303A(b)] (NMFS 2007).

Box ES-1 (Continued). Summary of the excessive shares alternatives. ***The Council needs to choose a specific model and affiliation level to implement and/or monitor any particular excessive shares cap level.***

Alternatives	Summary of Alternative
Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)	A two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report.
***Sub-Alternative 4.1*:** Two-part cap based on highest level in the ownership data, 2016-2017	The two-part cap approach (one cap on allocation ownership and one cap on combined [allocation ownership plus leasing of annual allocation or cage tags]) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period. The species-specific cap levels do not have to be the same for each species.
Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation	The two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, a 15% for additional consolidation is added to the maximum values reported in the ownership data for the 2016-2017 period. The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate/growth if market conditions allow.
Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%	The two-part cap with an ownership quota share cap at 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report.
Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota	The cap would be 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (annual catch target) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. A 40% cap could potentially result in a minimum (if fully consolidated) of three large entities participating in the fisheries (i.e., 40%, 40%, and 20%).
Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota	The cap would be 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. A 49% cap could potentially result in a minimum (if fully consolidated) of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%).

Box ES-2. Summary of the excessive shares review alternatives.	
Alternatives	**Summary of Alternative**
Alternative 1: (No Action/*Status Quo*)	There would not be a requirement for periodic review of implemented excessive share measures.
Alternative 2: Require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed	This alternative would require for periodic review of excessive shares measures that the Council adopts.

Box ES-3. Summary of the framework adjustment process alternatives.	
Alternatives	**Summary of Alternative**
Alternative 1: (No Action/*Status Quo*)	No changes to the list of management measures that can be addressed via the framework adjustment process.
Alternative 2: Add excessive shares cap levels to the list of measures to be adjusted via framework	This alternative would of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap), only if the modification would not result in an entity having to divest.

Box ES-4. Summary of the multi-year management measures alternatives.	
Alternatives	**Summary of Alternative**
Alternative 1: (No Action/*Status Quo*)	No changes to the process to set surfclam and ocean quahog management specifications for up to 3 years.
Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule	Specifications could be set for a period up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set until a new surfclam and/or ocean quahog assessment is produced.

1.2 Summary of Impacts

The following section presents a summary of the expected impacts by alternative and cumulative for management alternatives being considered (Boxes ES-5 to ES-8). The impacts of each alternative, and the criteria used to evaluate them, are described in section 7.0. Impacts (qualitative and/or quantitative) are described in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). In section 7.0, the alternatives are compared to current condition of the value ecosystem component (VEC) and also compared to each other. The recent conditions of the VECs include the biological condition of the target stock, non-target stocks, and protected species over most of the recent five years, as well as characteristics of commercial fisheries and associated human communities over the same time frame. The guidelines used to determine impacts to each VEC are described in section 7.0 (see especially Table 16).

The actions proposed through this amendment are largely administrative in nature and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted. However, these alternatives may have indirect impacts, particularly for the human communities VEC.

In general terms, measures that would curtail entities from exerting market power and therefore not decreasing competition would have positive socioeconomic impacts. Lastly, measures that would result in community disruptions as result of additional consolidation (e.g., decrease in the number of independent harvesters, decrease in employment) would have negative socioeconomic impacts.

Excessive consolidation, in an economic context, is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery. Anticipated impacts are described below.

1.2.1 Excessive Share Alternatives

1.2.1.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. None of

the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, none of the alternatives evaluated are expected to have impacts (direct or indirect) on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.1.2 Human Communities/Socioeconomic Impacts

Alternative 1

As previously indicated, none of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions.

Under alternative 1 (no action/*status quo*) the current management approach regarding excessive shares (i.e., share accumulation) would continue. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. The FMP would rely only on federal anti-trust provisions. The Department of Justice (DOJ) has indicated that their Business Practice Process does provide a pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment. Therefore, this alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0), and a means to track and monitor ownership relative to that definition is needed.

Since alternative 1 does not include a limit or definition of excessive shares accumulation, it could potentially lead to one entity holding 100% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. An excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries. Alternative 1 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions.

Alternative 2

Alternative 2 considers a single cap on how much quota one individual or entity could hold. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags). Because alternative 2 is based on ownership-only values, none of the sub-alternatives discussed below account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when

setting the cap limit. Participants in these fisheries have reported that they are various types of transactions involving ITQs that commonly occur, including temporary and permanent ITQ transfers, long-term ITQ leases (e.g., five years or more) and transfers of bushel tags from bank lenders and between related and unrelated business entities.

Note: The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and/or monitor any particular excessive shares cap level.[4]

Under Sub-alternative 2.1, the single quota would be based on the highest level of quota share held by any individual or entity reported in the ownership data for each fishery for the 2016-2017 period. The highest level of quota share held by any individual or entity during 2016-2017 was 28% for surfclams and 22% for ocean quahogs (regardless of model or affiliation level; Tables 2 and 3). If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in this fishery (i.e., four large entities at 28%, 28%, 28%, and 16%). If fully consolidated, a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in this fishery (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%). This implies at least four entities in the surfclam and five entities in the ocean quahog fisheries, which may provide some protection against excessive consolidation and associated market power and social issues. However, as indicated in section 5.0, it is also possible that under all alternatives evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

If the surfclam and ocean quahog cap levels described above (28% and 22%, respectively) had been implemented in 2017, all entities would have fallen at or below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.1 in the surfclam or ocean quahog fisheries. Sub-alternative 2.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Under Sub-alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.2 in the

[4] See Definitions and Terminology at the end of Section 2.0 for more information on these choices. More detailed information on these choices is also found in sections 5.0 and 7.0.

surfclam or ocean quahog fisheries. Sub-alternative 2.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Under Sub-alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%; Table 18). This sub-alternative is based on the recommendations made by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). It is stated in the Compass Lexecon Report it is possible that under some circumstances an excessive shares cap of 100% may be appropriate. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011).

Sub-alternative 2.3 could potentially result in quota accumulation levels that are near identical to those under alternative 1 (*status quo* alternative). If one firm or entity controls 95% of the quota, there would be no market for leasing under the current quota levels for these species, as nearly all the quota would be held by a single entity. Sub-alternative 2.3 could potentially allow for share concentration levels similar to those under the current conditions and as such, it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries.

If the surfclam and ocean quahog cap levels described above (95% for surfclam and 95% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.3 in the surfclam or ocean quahog fisheries. Sub-alternative 2.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions.

Comparisons Across Sub-Alternatives 2.1 to 2.3

In this section a comparison between sub-alternatives 2.1 through 2.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 2.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 2.2 and 2.3 as no entity would be above the caps (if they had been implemented in 2017). However, in the long-term, alternative 2.1 would have slight positive socioeconomic impacts compared to sub-alternative 2.2, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.1 would have positive socio-economic impacts compared to sub-alternative 2.3, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation (as sub-alternative 2.3 could potentially result in one large entity controlling 95% of the quota for surfclam and/or ocean quahogs).

Sub-alternative 2.2 would have less positive socioeconomic impacts in the long-term compared to sub-alternatives 2.1, as sub-alternative 2.2 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.2 would have positive socioeconomic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.2 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 2.3 would have negative socioeconomic impacts in the long-term compared to sub-alternatives 2.1 and 2.2, as sub-alternative 2.3 has the potential to provide the smallest degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 2.1 would result in the most positive impacts, sub-alternative 2.2 would result in the second most positive impacts, and sub-alternative 2.3 would result in the least positive impacts.

Alternative 3

Alternative 3 considers a combined cap – combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

Under Sub-alternative 3.1, the cap would be based on the highest level of combined cap held by any individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. Under sub-alternative 3.1, depending on the affiliate level and model selected, the combined cap for surfclam could be as low as 28% under the net actual percentage model (at the individual/business level) or as high as 49% under the cumulative 100% model (at the corporate officer level; Tables 2 and 19). Based on these combined cap values, sub-alternative 3.1 could result in a minimum number of large entities (if fully consolidated) in the surfclam fishery ranging from four under the net actual percentage model to two under the cumulative 100% model (Table 19). Under this alternative, depending on the affiliate level and model selected, the combined cap for ocean quahogs could be as low as 29% under the net actual percentage model (at the individual/business level) or as high as 41% under the cumulative 100% model (at the corporate officer level; Table 3 and 19). For ocean quahogs, this sub-alternative could result in a minimum number of large entities (if fully consolidated) ranging from four under the net actual percentage model to three under the cumulative 100% model (Table 19).

If the surfclam and ocean quahog combined cap levels described above had been implemented in 2017, all entities would have fallen below those combined caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the combined cap levels under sub-alternative 3.1 in the surfclam or ocean quahog fisheries. Sub-alternative 3.1 is expected to have socioeconomic impacts ranging from no impact

in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, some of the potential lower combined cap values under this sub-alternative (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.

Under Sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those combined caps under the net actual percentage model for both surfclams and ocean quahogs. However, under the cumulative 100% model, between one (1% of all entities) and three (4% of all entities) surfclam entities and between one (2% of all entities) and four (9% of all entities) ocean quahog entities would have had combined cap above these levels depending on the affiliation level (Table 19).

In general terms, sub-alternative 3.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, as indicated above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Under Sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.2 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Comparisons Across Sub-Alternatives 3.1 to 3.3

In this section a comparison between sub-alternatives 3.1 through 3.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 3.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 3.2 and 3.3, as in general terms, no entity would be above the caps (if they had been implemented in 2017; the exception to this generality is listed below). In the long-term, alternative 3.1 would have no socioeconomic impacts in the long-term compared to sub-alternative 3.2, because they both could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 19). The exception to this generalization would be sub-alternative 3.1 under the cumulative 100% model which would result in two large entities participating in the surfclam fishery, and as such, provides a lesser degree of protection against excessive consolidation and associated market power and social issues. As such, this results in long-term positive impacts that are smaller in magnitude. Lastly, in general terms, sub-alternative 3.1 would have positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.1 has the potential to provide a larger degree of protection against excessive consolidation. However, some of the potential lower combined cap values under sub-alternative 3.1 (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 3.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 3.2 and 3.3.

Sub-alternative 3.2 would have slight positive socioeconomic impacts in the long-term compared to sub-alternatives 3.3, as sub-alternative 3.2 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. However, as noted above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount

of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Sub-alternative 3.3 would have slightly less positive socioeconomic impacts in the long-term compared to sub-alternatives 3.1 and 3.2, as sub-alternative 3.3 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 3.1 would result in the most positive impacts, sub-alternative 3.2 would result in the second most positive impacts, and sub-alternative 3.3 would result in the least positive impacts.

Alternative 4

Alternative 4 considers a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Mitchell et al. (2011) indicated that "the preference for short-term accumulations in the two-part cap limits the share of long-term quota controlled by any single party, which limits the ability to foreclose competitors by withholding quota on a committed multiseason basis." Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex contracting business practices that occur in this fisheries.

Under Sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage tags) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period.

Under sub-alternative 4.1, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 28% ownership / 28% combined under the net actual percentage model (at the individual/business level) or as high as 28% ownership / 49% combined under the cumulative 100% model (at the corporate officer level; Tables 2 and 20). Based on these combined cap values, sub-alternative 4.1 could result in a minimum number of four large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 22% ownership / 29% combined under the net actual percentage model (at the individual/business level) or as high as 22% ownership / 41% combined under the cumulative 100% model (at the corporate officer level; Tables 3 and 20). For ocean quahogs, this sub-alternative could result in a minimum number of five large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries. Sub-alternative 4.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. However, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.

Under Sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for 2016-2017 to allow for additional consolidation (Table 20). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow.

Under sub-alternative 4.2, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 43% ownership / 43% combined under the net actual percentage model (at the individual/business level) or as high as 43% ownership / 64% combined under the cumulative 100% model (at the corporate officer level; Table 20). Based on these combined cap values, sub-alternative 4.2 could result in a minimum number of three large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 37% ownership / 44% combined under the net actual percentage model (at the individual/business level) or as high as 37% ownership / 56% combined under the cumulative 100% model (at the corporate officer level; Table 20). For ocean quahogs, this sub-alternative could result in a minimum number of three large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.2 in the surfclam or ocean quahog fisheries. Sub-alternative 4.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Under Sub-alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. If fully consolidated, a 30% ownership cap and a 60% combined cap (quota share ownership plus leasing of annual allocation or cage tags) could potentially result in a minimum of four large entities (if fully consolidated) participating in the fisheries (i.e., 30%, 30%, 30%, 10%; Table 20).

If the surfclam and ocean quahog two-part cap levels described above (i.e., 30%/60%) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.3 in the surfclam or ocean quahog fisheries. Sub-alternative 4.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. In addition, since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Comparisons Across Sub-Alternatives 4.1 to 4.3

In this section a comparison between sub-alternatives 4.1 through 4.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

In general terms, sub-alternatives 4.1, 4.2, and 4.3 are likely to have neutral socioeconomic impacts (e.g., similar magnitude and direction) in the short-term and long-term, because they all could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 20). In general terms, sub-alternatives 4.1 and 4.3 would result in neutral socioeconomic impacts in the short-run and long-run but marginally positive compared to sub-alternative 4.2. As such, they all have the potential to provide a relatively similar degree of protection against excessive consolidation and associated market power and social issues. In addition, none of these sub-alternatives would result in any entity been above the caps (if they had been implemented in 2017). However, some of the potential lower two-part cap values under sub-alternative 4.1 (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 4.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 4.2 and 4.3.

Alternative 5

Alternative 5 considers a cap on quota share ownership-only of 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of

the last 5 years) and B shares is the difference between the ACT (annual catch target) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

The 40% cap is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011).

If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 21). If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 21). As such, no entity would have been constrained by the cap levels under alternative 5 in the surfclam or ocean quahog fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase. In addition, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. Alternative 5 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. For example, it was indicated that:

- Establishing a Quota A and Quota B shares system would send a market signal indicating that the surfclam and ocean quahog quotas (TACs) have been reduced, because the amount of quota released under Quota A shares is lower than the overall TACs that have been implemented in recent years. This in turn could result in big companies that purchase clam products (Progresso, Campbell Soup Company, etc.) to switch to lower quality foreign imports
- Quota A and Quota B shares system would disrupt banking/financial arrangement because ITQ shares have been used as collateral in securing long-term loans
- Aligning the quota with market demand may not necessarily result in equilibrium because long-term contacts arrangement (leasing arrangements) exist in these fisheries; and breaking existing long-term contracts could result in lawsuits
- Aligning the quota with market demand would give market power to the industry members that have not been able to lease/use their ITQ shares in recent years
- This alternative could result in closing of processing plants
- There is the potential for someone to lease large quantities of A shares and not use them to develop market power

Alternative 6

Alternative 6 considers a cap on quota share ownership-only of 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the tilefish golden IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. The only difference between alternatives 5 and 6 are the cap levels on quota share ownership, all other aspects of the alternatives are identical.

If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%). If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office). As such, no entity would have been constrained by the cap levels under alternative 6 in the surfclam or ocean quahog fisheries. Alternative 6 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed under alternative 5 and also apply here.

Comparisons Across All Excessive Shares Alternatives

In general terms, alternatives 5 and 6 would result in the largest positive impacts as a result of protection against market power or other anticompetitive behaviors and associated social issues, alternatives 3 and 4 would result in the second highest positive impacts, alternative 2 would result in the third highest positive impacts, and alternative 1 would result in the least positive impacts. More detail of the expected impacts is provided below.

Alternative 1 (No Action)

As previously indicated, under alternative 1 (no action) no limit or definition of excessive shares accumulation is included in the FMP. This alterative is expected to result in impacts ranging from no impacts in the short-term to negative impacts in the long-term when compared to alternatives 2 through alternative 6, because alternative 1 provides no protection against excessive consolidation and associated market power and social issues. The exception would be when alternative 1 is compared to sub-alternative 2.3, as sub-alternative 2.3 could potentially allow for share concentration levels similar to those under alternative 1, and it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Compared to sub-alternative 2.3, alternative 1 is likely to have a similar magnitude of socioeconomic impacts (i.e., neutral).[5]

None of the excessive share alternatives discussed in this document are expected to impact the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted. However, these alternatives may have indirect impacts, particularly for the human communities VEC.

Alternative 2

Alternative 2 would implement a single cap based on quota share ownership-only with unlimited leasing of annual allocations (cage tags). Because alternative 2 is based on ownership-only values, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative would limit the exercise of market power through capping ownership levels for surfclams and ocean quahogs, but it does not address the creation or exercise of market power through contractual control of quota.

Alternative 2 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 3 and alternative 4, alternative 2 is expected to have similar directional impacts (i.e., no impacts in the short-term to

[5] Since sub-alternative 2.3 is likely to result in impacts similar to those under alternative 1, all other comparisons involving alternative 2 exclude sub-alternative 2.3, with the understanding that when comparisons are made with sub-alternative 2.3 exclusively, impacts would be similar to those under alternative 1 (no action/*status quo*).

positive impacts in the long-term) but smaller in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternatives 3 and 4).

Lastly, alternative 2 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 3

Alternative 3 would implement a combined cap based on quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Alternative 3 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 3 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 3). Compared to alternative 4, alternative 3 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 3 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 4

Alternative 4 would implement a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on

ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Alternative 4 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 4 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 4). Compared to alternative 3, alternative 4 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 4 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 5

Alternative 5 would implement a cap on quota share ownership-only with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Alternative 5 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because alternative 5 not only addresses the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also aligns supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. For these same reasons, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) compared to alternatives 2, 3, and 4, but likely larger in magnitude. Lastly, compared to alternative 6, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. However, under alternative 5, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will

decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners.

However, as indicated above, during the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed above under alternative 5.

Alternative 6

The expected impacts under alternative 6 are similar to those described under alternative 5 above.

1.2.2 Excessive Shares Review Alternatives

1.2.2.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would not be a requirement for periodic review of implemented excessive shares measures. Alternative 2, would require for periodic review of excessive shares measures that the Council adopts. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.2.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels (and expected ex-vessel revenues), fishery distribution, or fishing methods and practices. However, conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure established at an appropriate level now could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry). Thus, not having a mechanism in place to review the effectiveness of implemented excessive shares measures (alternative 1) could result in socioeconomic impacts that range from no impacts (if implemented excessive shares measures or cap level is appropriate through time) to slight negative (if implemented excessive shares measures or cap level is not appropriate through time) when compared to current conditions.

Alternative 2, is also administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. As with the no action alternative above, alternative 2 is not expected to have impacts on the quantity of surfclam or ocean quahog landings, including revenues. However, this alternative requires periodic review of

excessive shares measures that the Council adopts. This alternative would implement a periodic review of regulations to protect against market power or other anticompetitive behavior in these fisheries in a timely manner. Alternative 2 is expected to result in socioeconomic impacts ranging from no impacts to slight positive when compared to current conditions. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts as it allows for a proactive review of excessive management shares management measure(s) implemented by the Council. While it is not possible to anticipate the potential management costs associated with alternative 2, they are likely to be higher than those associated with alternative 1. Costs will depend on the complexity and scope of the review process.

1.2.3 Framework Adjustment Process Alternatives

1.2.3.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would not be changes to the list of management measures that can be addressed via the framework adjustment process. Alternative 2 would expend of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources.

1.2.3.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels (and expected ex-vessel revenues), fishery distribution, or fishing methods and practices. Alternative 1 (no action) would not allow the excessive shares cap to be modified via the framework adjustment process. The Council would still have the prerogative to review any adopted excessive shares measures and make modifications to any implemented excessive cap level through an amendment if it becomes inefficiently high or low through time as fisheries conditions change. However, making modifications to existing regulations using an amendment process requires more work and time compared to a framework process. Not having the flexibility to make minor modifications to the excessive shares cap level (no action alternative) could result in socioeconomic impacts ranging from no impact to slightly negative when compared to current conditions. Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. The proposed alternative would provide flexibility to address potential modifications to any implemented excessive cap level (i.e., cap value only and not underlaying cap system) if it becomes inefficiently high or low through time as fisheries conditions change. Alternative 2 is expected to

result in socioeconomic impacts that range from no impact to slight positive when compared to current conditions. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts because this alternative provides the flexibility to adjust potential modifications to any implemented excessive cap level if it becomes inefficiently or low through time as fisheries conditions change, and this has the potential to reduce needed staff time and management cost.

1.2.4 Multi-Year Management Measures Alternatives

1.2.4.1 Impacts to Surfclams and Ocean Quahogs and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. None of the alternatives are expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. These alternatives are administrative in nature and would therefore have no impacts on the target species and non-target species when compared to current conditions. All alternatives evaluated would have similar impacts on target and non-target species, habitat, and protected resources. Although there are no impacts on the VECs, alternative 2 would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

1.2.4.2 Human Communities/Socioeconomic Impacts

These alternatives are administrative in nature and would therefore have no impacts on human communities (i.e., socioeconomic impacts).

Box ES-5. Summary of the expected impacts of excessive shares alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least)

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 1 (No-Action/*Status Quo*)	No limit or definition of an excessive share is included in the FMP	No Impact	No impact in the short-term to - in the long-term if consolidation patterns result in decreased competition. Could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries	NA (Not Applicable)
Alternative 2 Sub-alternative 2.1	Single Cap - Quota share cap based on highest level in the ownership data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Cap based on ownership-only)	1
Alternative 2 Sub-alternative 2.2	Single Cap - Quota share cap at 49%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Cap based on ownership-only)	2
Alternative 2 Sub-alternative 2.3	Single Cap - Quota share cap at 95%	No Impact	No impact in the short-term to - in the long-term if consolidation patterns result in decreased competition. (Cap based on ownership-only). Could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries	3
Alternative 3 Sub-alternative 3.1	Combined Cap - based on highest level in the ownership data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota). However, some of the potential lower combined cap values under this sub-alternative (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.	1
Alternative 3 Sub-alternative 3.2	Combined Cap at 40%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota). If implemented in 2017, this sub-alternative would had constrained 4 entities, incurring slight negative socioeconomic impacts in the short-term and long-term	2

Box ES-5 (Continued). Summary of the expected impacts of excessive shares alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least).

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 3 Sub-alternative 3.3	Combined Cap at 49%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Limits the exercise of market power that could be derived through both quota ownership and contractual control of quota)	3
Alternative 4 Sub-alternative 4.1	Two-part cap (one cap on ownership and one cap on combined) - based on highest level in the ownership data, 2016-2017	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on ownership and combined cap (ownership + leasing). However, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.	1
Alternative 4 Sub-alternative 4.2	Two-part cap - Same as 4.1 + 15%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on ownership and combined cap (ownership + leasing)	2
Alternative 4 Sub-alternative 4.3	Two-part cap - ownership quota share cap at 30% and combined cap at 60%	No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues). Cap on ownership and combined cap (ownership + leasing)	1

Box ES-5 (Continued). Summary of the expected impacts of excessive shares alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect. The ranking within alternative suites is in terms of providing protection against excessive consolidation and associated market power and social issues (1 most to 3 least).

Alternative	Brief Description	Target/Non-Target Species; Physical Habitat; Protected Resources	Human Communities (Socioeconomic)	Rank
Alternative 5		No Impact	No impact in the short-term to + in the long-term (provides protection against excessive consolidation and associated market power and social issues. Aligns supply in the fisheries with market demand). However, this alternative would result in processors paying more in financial cost (due to additional leasing and/or purchase costs), thus resulting in negative socioeconomic impacts in the short-term and long-term. This alternative will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners. During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices	NA
Alternative 6	No Impact	No Impact	Same as those under alternative 5 above	NA

Box ES-6. Summary of the expected impacts of excessive shares review alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact to slight -
Alternative 2	No Impact	No Impact	No Impact	No impact to slight +

Box ES-7. Summary of the expected impacts of framework adjustment process alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No impact to slight -
Alternative 2	No Impact	No Impact	No Impact	No impact to slight +

Box ES-8. Summary of the expected impacts of multi-year management alternatives, relative to current conditions. – = negative; + = positive impact; slight = minor effect.

Alternative	Target and Non-Target Species	Physical Environment/ Habitat/EFH	ESA-Listed Protected Species (endangered or threatened)	Human Communities (Socioeconomic)
Alternative 1 (No-Action/*Status Quo*)	No Impact	No Impact	No Impact	No Impact
Alternative 2	No Impact	No Impact	No Impact	No Impact

2.0 LIST OF FREQUENTLY USED ACRONYMS, CONVERSIONS, AND DEFINITIONS

Frequently Used Acronyms

ABC	Acceptable Biological Catch
ACT	Annual Catch Target
bu	Bushels
CEA	Cumulative Effects Assessment
COE	Chief Executive Officer
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIE	Center for Independent Experts
cm	Centimeter (0.393 inches)
CSP	Catch Share Programs
DOJ	U.S. Department of Justice
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EMUs	Ecological Marine Units
EO	Executive Order
ESA	Endangered Species Act
F	Fishing Mortality Rate
FMAT	Fishery Management Action Team
FMP	Fishery Management Plan
FR	Federal Register
FONSI	Finding of No Significant Impact
GAO	Government Accountability Office
GARFO	Greater Atlantic Regional Fisheries Office
GB	Georges Bank
GOM	Gulf of Maine
GSC	Great South Channel
HMA	Habitat Management Area
IBQ	Individual Bluefin Quota
IFQ	Individual Fishing Quota
ITQ	Individual Transferrable Quota
k	Kilometer (0.621 miles)
LAPP	Limited Access Privilege Program
LPUE	Landings Per Unit of Effort
m	Meter (3.280 feet)
MAFMC	Mid-Atlantic Fishery Management Council (Council)
MFP	Multi-factor Productivity
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NRCC	Northeast Regional Coordinating Council
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NS	National Standard
OHA2	Omnibus Essential Fish Habitat Amendment 2 (NEFMC)
OFL	Overfishing Limit

OY	Optimal Yield
P, Pr, RFF	Past, Present, Reasonably Foreseeable Future
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
PSP	Paralytic Shellfish Poisoning
R	Recruitment
R_0	Recruitment in an Unfished Stock
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SBA	Small Business Administration
SSB	Spawning Stock Biomass
SSC	Scientific and Statistical Committee
SASI	Swept Area Seabed Impact
U.S.	United States
VEC	Valued Ecosystem Component
VMS	Vessel Monitoring Systems
WGOM	Western Gulf of Maine

Conversions

1 metric ton (mt) = 2,204.622 pounds (lb); 1 kilometer = 0.621 miles; 1 meter (m) = 3.280 feet (ft); 1 centimeter (cm) = 0.393 inches; 1 Maine bushel = 11 lb meats (1.2445 ft^3); 1 Atlantic surfclam bushel = 17 lb meats (1.88 ft^3) ; 1 ocean quahog bushel = 10 lb meats (1.88 ft^3). Number of bushels divided by 32 = number of cage tags.

Definitions and Terminology

Annual Allocation/Cage Tags: For each species (surfclam and ocean quahogs), the initial allocation for the next fishing year is calculated by multiplying the quota share percentage held by each ITQ permit holder by the quota specified by the Regional Administrator. The total number of bushels of annual allocation is divided by 32 to determine the appropriate number of cage tags to be issued to allocation holders.

Atlantic Surfclam and Ocean Quahog Information Collection Program Data: Requirements became effective on January 1, 2016. The Atlantic Surfclam and Ocean Quahog Information Collection Program was implemented at the request of the Council to provide additional information about corporate ownership and other forms of control of allocations. This information allows managers to better characterize current levels of ownership concentration to assist in defining an excessive share, and to monitor and enforce any future restriction on share levels in the fisheries.

Excessive Consolidation: In an economic context, it is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

Excessive Share: For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap that is intended to prevent a firm or entity from exerting market power. The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

ITQ (Individual Transferrable Quota): A form of output control in which harvesting privileges are allocated to individual fishermen.

ITQ Quota Share: Percent of the total quota held by each ITQ permit holder.

Monopoly: A market situation where there is only one seller of a product, and where there are no close substitutes of the product.

Monopsony: A market situation where there is only buyer of a product.

National Standards (NS): The National Standards are principles that must be followed in any fishery management plan to ensure sustainable and responsible fishery management. As mandated by the Magnuson-Stevens Fishery Conservation and Management Act, NMFS has developed guidelines for each National Standard. When reviewing fishery management plans, plan amendments, and regulations, the Secretary of Commerce must ensure that they are consistent with the National Standard guidelines. See section 8.0 of this document for more detail on the 10 National Standards under the MSA. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 4 - Allocations: Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (a) fair and equitable to all such fishermen; (b) reasonably calculated to promote conservation; and (c) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privilege. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 5 - Efficiency: Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

National Standard 8 - Communities: Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirement of paragraph (2) [i.e., National Standard 2], in order to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities. See https://www.fisheries.noaa.gov/national/laws-and-policies/national-standard-guidelines for additional information.

Oligopoly: A market situation with relatively few sellers who are mutually interdependent in their marketing activities (e.g., some food processing industries are oligopolistic).

Oligopsony: A market situation where there are a few buyers of a product and each of the few buyers exerts a disproportionate influence on the market.

Ownership Data: This term is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data (see above)."

Quota Share Ownership: The quota share held by an individual or entity. In a manner of speaking, "ownership" usually represents a property right in perpetuity or for as long as the owner wants. However, under MSA there are some important policy issues with respect to duration in the design of limited access privilege programs (e.g., ITQs). The MSA stipulates that limited access privileges may be revoked or limited in accordance with the MSA, they do not confer rights of compensation, and they do not create any ownership of a fish before it is harvested [Section 303A(b)] (NMFS 2007).

Transferability Rules: These allow ITQ allocation holders to buy, sell, give away (permanent transfer ITQ quota share) or lease their privileges (temporarily transfer cage tags). When quota is leased out, cage tags are temporarily transferred from the ITQ quota allocation holder (lessor) to the person leasing cage tags (lessee).

Two-Tier Quota: Quota system that aligns supply in the fisheries with market demand (described under excessive share alternatives 5 and 6). Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the annual catch target (ACT) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

Models for determination of quota ownership (or share totals for ownership quota share) and combined level (ownership plus leasing of cage tags):

Ownership Percentage Models: There are models for determination of quota ownership (or share totals for ownership quota share) and the combined level (ownership plus leasing of cage tags)

Net Actual Percentage Model - Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

Cumulative 100% Model - Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels:

Individual/Business Level - Smallest unit at the individual level or business (if an individual owner cannot be identified);

Family Level **(individual / business level + family level)*** - Includes any family associations that are not already accounted at the individual business level ; and,

Corporate Officer Level **(individual / business level + family level + corporate officer level)** - Includes association through corporate officer's that are not accounted for in the other levels.

*On the "Surfclam/Ocean Quahog Individual Transferable Quota (ITQ) Ownership Form," *Immediate Family* is defined as: Father, mother, husband, wife, son, daughter, brother, sister, grandfather, grandmother, grandson, granddaughter, father-in-law, or mother-in-law (https://www.greateratlantic.fisheries.noaa.gov/aps/forms.html).

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4.0 INTRODUCTION AND BACKGROUND

This document was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA)[6] and National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ), and the Atlantic Surfclam and Ocean Quahog FMP. The management regime and objectives of the fisheries are detailed in the FMP, including any subsequent amendments are available at: http://www.mafmc.org, and briefly described below.

4.1 PURPOSE AND NEED OF THE ACTION

The primary purpose of this action is to implement measures under the MSA to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. National Standard 4 states that "... *If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges*." In 1990 Amendment 8 implemented the ITQ program for the Atlantic surfclam and ocean quahog fisheries. Amendment 8 did not include a specific cap or measures that limited the maximum amount of shares that could be owned by an individual, corporation, or entity (MAFMC 1988).

In the 27 years since the implementation of the ITQ program, the number of firms or entities participating in these two fisheries have declined and action is needed to avoid excessive share concentration by defining what constitutes an excessive share in the Atlantic surfclam and ocean quahog ITQ privileges to ensure the FMP is in compliance with the MSA. In 2016, a new data collection protocol was implemented by NMFS that allows managers to better assess quota ownership and concentration levels.[7]

For the surfclam and ocean quahog fisheries, the Council defines an excessive share as an ITQ share accumulation for an individual or business that is above the excessive share percentage cap selected by the Council for surfclam or ocean quahog (based on the affiliation and tracking model selected). In identifying this cap, the Council considered the intent of fisheries management as prescribed through the National Standards of the MSA, including both social and economic concerns. The Council considered economic concerns and selected an excessive shares cap that is intended to prevent a firm or entity from exerting market power. The Council also considered social concerns for fishing communities - as expressed in MSA National Standard 8 - which includes community participation, and a sense of equity and fairness that may, in part, be grounded in the history of fishery management in this country.

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[6] Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSRA), and available at: http://www.nmfs.noaa.gov/sfa/magact/MSA_Amended_2007%20.pdf

[7] Atlantic Surfclam and Ocean Quahog Information Collection Program Requirements became effective on January 1, 2016. The Atlantic Surfclam and Ocean Quahog Information Collection Program was implemented at the request of the Council to provide additional information about corporate ownership and other forms of control of allocations. This information allows managers to better characterize current levels of ownership concentration to assist in defining an excessive share, and to monitor and enforce any future restriction on share levels in the fisheries.

In an economic context, excessive consolidation is a level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopsony), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

In addition, this action includes measures to revise the process for specifying multi-year management measures. This action would allow multi-year management measures to be set for a maximum number of years consistent with the approved NRCC stock assessment schedule. This approach is expected to provide for better consistency and administrative efficiency. This action would also require periodic review of the excessive cap share level to be made and allow adjustments to the frameworkable provisions in the FMP.

Lastly, this action includes revisions to the goals and objectives of the FMP. The Council is undergoing a process to review and possibly revise goals and objectives for all its managed fisheries and FMPs. The Council initiated a process to consider revised goals and objectives for the FMP in support of its 2014-2018 Strategic Plan and 2017 Implementation Plan (http://www.mafmc.org/strategic-plan). This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they are consistent with today's fisheries and management issues. The issue is included in the Excessive Shares Amendment to take advantage of efficiencies in timing and public review.

There are currently 16 limited catch shares programs in the country. 13 of these programs have specific excessive shares caps. Two other programs do not specify an excessive shares cap, but they have other measures in place to avoid excessive accumulation of share or allocation. The surfclam and ocean quahog fisheries are the only federally-managed fisheries in the country that do not have measures to limit share accumulation.[8] See Appendix A for additional information on excessive share caps for catch shares programs in the USA.

4.2 FMP OBJECTIVES

4.2.1 Current FMP Objectives

The original FMP objectives were adopted through Amendment 8 to the Atlantic Surfclam and Ocean Quahog FMP, which implemented the ITQ system in 1990 (MAFMC 1988). The FMP objectives have remained unchanged since that time. This amendment proposed modification of objectives. The current FMP objectives are as follows:

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.

[8] Section 303A of the MSA has additional requirements for catch share programs adopted after January 12, 2007.

2. Simplify to the maximum extent the regulatory requirements of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

After the ITQ system for the clam's fisheries was implemented in 1990, the Regional Administrator granted experimental status to the small-scale eastern Maine ocean quahog fishery that was operating in the EEZ. Amendment 10 fully integrated the Maine fishery into the Atlantic Surfclam and Ocean Quahog FMP. The specified objectives under Amendment 10 (MAFMC 1998a) did not change the overall FMP objectives adopted under Amendment 8. Specified FMP objectives for the eastern Maine ocean quahog fishery under Amendment 10 are as follows:

1. Protect the public health and safety by the continuation of the State of Maine's PSP (Paralytic Shellfish Poisoning) monitoring program for ocean quahogs harvested from the historical eastern Maine fishery.
2. Conserve the historical eastern Maine portion of the ocean quahog resource.
3. Provide a framework that will allow the continuation of the eastern Maine artisanal fishery for ocean quahogs.
4. Provide a mechanism and process by which industry participants can work cooperatively with Federal and State management agencies to determine the future of the historical eastern Maine fishery.

4.2.2 Proposed Revisions to FMP Objectives

As indicated in section 4.1, the Council is undergoing a process to review and revise goals and objectives for all their managed fisheries and FMPs. The Council initiated a process to consider revised goals and objectives for the Atlantic Surfclam and Ocean Quahog FMP in support of the 2014-2018 Strategic Plan and 2017 Implementation Plan. This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they are consistent with today's fisheries and management issues. The consideration of revising the FMP goals and objectives is separate from the Council's consideration of excessive share measures. This issue is included in the Excessive Shares Amendment to take advantage of efficiencies in timing and other resources.

Feedback and industry input on the FMP goals and objectives were gathered in a two-stage process. First, when the Council conducted scoping hearings to solicit public input on the development of the Excessive Shares Amendment, feedback on FMP goals and objectives was also gathered. Second, the Council contracted the Fisheries Leadership & Sustainability Forum (Fisheries Forum) to develop a process to support the Council's review of FMP goals and objectives. The Fisheries Forum collected feedback from the Council's Surfclam and Ocean Quahog Committee, the

Council's Surfclam and Ocean Quahog Advisory Panel, and state agency representatives from states engaged in the fisheries that were not represented on the Committee (Maine and Massachusetts). The Fisheries Forum synthetized all feedback gathered to identify major ideas and themes. The Council's Surfclam and Ocean Quahog Fishery Management Action Team (FMAT) reviewed this information and developed recommendations for new FMP goals and objectives. The Council reviewed the FMAT recommendations at the October 2017 Council meeting and approved the FMAT recommendations for inclusion in the public hearing document for this amendment in order to gather further input during the public hearing process. These recommendations are listed below. For additional details on the rationale for these recommendations see Appendix B.

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.

Objective 2.1: Promote compatible regulations between state and federal entities.

Objective 2.2: Promote coordination with the New England Fishery Management Council.

Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.

Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.

Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.

Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.

Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

4.3 MANAGEMENT UNIT

The management unit is all Atlantic surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) in the Atlantic EEZ. Amendment 10 also established a management regime specific to the eastern Maine fishery for a zone north of 43° 50' north latitude.

4.4 AMENDMENTS AND OTHER FMP MODIFICATIONS

The Council has been involved in surfclam and ocean quahog management since its first Council meeting (September 1976). An overview of the original FMP, amendments, and framework actions

that have affected management of surfclams and ocean quahogs are summarized in Table 1. These actions are available on the Council's website at: http://www.mafmc.org/.

Table 1. Summary of the history of the Atlantic Surfclam and Ocean Quahog FMP.

Year Approved	Document	Management Action(s)
1977	Original FMP	- Established management of surfclam and ocean quahog fisheries through September 1979 - Established quarterly quotas for surfclams - Established annual quotas for ocean quahogs - Established effort limitation, permit, and logbook provisions - Instituted a moratorium on entry into the surfclam fishery for one year to allow time for the development of an alternative limited entry system such as a "stock certificate" program
1979	Amendment 1	- Extended management authority through December 31, 1979 - Maintained the moratorium
1979	Amendment 2	- Extended the FMP through the end of 1981 - Divided the surfclam portion of the management unit into the New England and Mid-Atlantic Area - Introduced a "bad weather make up day" - Maintained the moratorium in the Mid-Atlantic Area
1981	Amendment 3	- Extended the FMP indefinitely - Imposed a 5.5" surfclam minimum size limit in the Mid-Atlantic Area - Expanded the surfclam fishing week in the Mid-Atlantic Area to Sunday - Thursday from Monday – Thursday - Established a framework basis for quota setting - Proposed a permit limitation system to replace the moratorium which was disapproved by NMFS - NMFS extended the moratorium
1984	Amendment 4 (Not approved)	- Amendment 4 was implemented on an emergency basis for 180 days beginning 1 July 1984 - Provided that any unharvested portion of a bimonthly allocation be added to the immediately following bimonthly allocation rather than being prorated over all remaining bimonthly periods and that trip and weekly limits be by vessel classes based on relative fishing power - NMFS subsequently determined that the document was not structurally complete for review
1985	Amendment 5	- Allowed for revision of the surfclam minimum size limit provision - Extended the size limit throughout the entire fishery - Instituted a requirement that cages be tagged
1986	Amendment 6	- Divided the New England Area into the Nantucket Shoals and Georges Bank Areas, the dividing line being 69° W Longitude - Combined the provisions of Amendment 4 with the Mid-Atlantic Council's Amendment 6 into one document - Replaced the bimonthly quotas with quarterly quotas - Eliminate the weekly landing limits for the Nantucket Shoals Area - Clarified the quota adjustment provisions for the Nantucket Shoals and Georges Bank Areas - Established one landing per trip provision

Table 1 (Continued). Summary of the history of the Atlantic Surfclam and Ocean Quahog FMP.

Year Approved	Document	Management Action(s)
1987	Amendment 7	- Changed the quota distribution on Georges Bank to equal quarterly quotas - Revised the roll over provisions
1990	Amendment 8	- Replaced the regulated fishing time system in the surfclam and ocean quahog fisheries with an ITQ system
1996	Amendment 9	- Revised the overfishing definitions for surfclams and ocean quahogs in response to a scientific review by NMFS
1998	Amendment 10	- Provided management measures for the small artisanal fishery for ocean quahogs (mahogany clams) off the northeast coast of Maine
1998	Amendment 11	- Achieved consistency among Mid-Atlantic and New England FMPs on vessel replacement and upgrade provisions, permit history transfer and splitting and renewal regulations for fishing vessels issued Northeast Limited Access Federal Fishery permits
1999	Amendment 12	- Brought the FMP into compliance with the new and revised National Standards and other requirements of the 1996 Sustainable Fisheries Act - Established a framework adjustment process - Implemented an Operator Permit requirement for fishermen that did not already have them for other fisheries - The Regional Administrator partially approved Amendment 12 with the exceptions of the proposed surfclam overfishing definition and the fishing gear impacts to (Essential Fish Habitat) EFH section
2003	Amendment 13	- Addressed various disapproved sections of Amendment 12
2007	Amendment 14	- Standardized bycatch reporting methodology
2007	Framework 1	- Addressed issues related to Vessel Monitoring Systems (VMS) and enforcement
2011	Amendment 16	- Established Annual Catch Limits (ACLs) and Accountability Measures (AMs)
2015	Amendment 15	- Standardized Bycatch Reporting Methodology
2015	Amendment 18	- Eliminated the requirement for vessel owners to submit "did not fish" reports for the months or weeks when their vessel was not fishing - Removed some of the restrictions for upgrading vessels listed on Federal fishing permits
2016	Amendment 17	- Established a cost recovery program for the ITQ program, as required by the MSA - Removed the optimum yield ranges from the management plan and changed how biological reference points are incorporated into the FMP
2017	Amendment 19	- Implemented management measures to prevent the development of new, and the expansion of existing, commercial fisheries on certain forage species in the Mid-Atlantic
2018	Framework 2	- Established a process for setting constant multi-year Acceptable Biological Catch (ABCs) limits for Council-managed fisheries - Clarified that the Atlantic Bluefish, Tilefish, and Atlantic Mackerel, Squid, and Butterfish FMPs will now automatically incorporate the best available scientific information in calculating ABCs (as all other Mid-Atlantic management plans do) rather than requiring a separate management action to adopt them Clarified the process for setting ABCs for each of the four types of ABC control rules

4.5 HISTORY OF THE ACTION

Court Case

The final rule implementing the surfclam and ocean quahog ITQ program became effective on September 30, 1990. Almost immediately, lawsuits were filed by groups of harvesters and processors challenging various features of the program, most notably the formula for allocating fishing privileges among fishery participants. The case *Sea Watch International v. Mosbacher* [Secretary of Commerce], 762 F. Supp. 370 (D.D.C. 1991), illustrates the major legal challenges to the initial allocation. In general, the plaintiffs in the case argued that the initial allocation was not fair and equitable and therefore in violation of National Standard 4 of the MSA and,

"The plaintiffs claimed that the initial allocation allowed particular individuals, corporations, or other entities to acquire an excessive share of fishing privileges. Plaintiffs alleged that the allocation would concentrate 40 percent of the annual catch quota for the ocean quahog fishery in two fishermen, and that fragmentation of the remaining shares would result in further consolidation as holders of small shares sold their interests, creating an impermissible restraint on competition."[9]

The court noted the 40 percent number "does give pause" but found the MSA has no definition of the term "excessive shares" and that the judgment of NMFS of what is excessive "deserves weight." Further, the court stated, "Even if the raw number measured a true economic market - which is by no means clear - a judgment of undue concentration could not be based on the mere existence of such a share possessed by the two largest participants." With that, the court dismissed the plaintiffs' argument.

Tracking Shares Concentration Following ITQ Plan Implementation

During the development of Amendment 8, the Council discussed in detail the requirements under National Standard 4.[10] During those discussions, the Council was advised by NOAA General Counsel (GC) that in order to address part (C) of National Standard 4, there was no legal requirement to put a specific cap (numeric cap) into Amendment 8. GC indicated that a cap is simply a tool to address the National Standard 4 part (C) and that if the Council could come up with an equally effective mechanism to meet that requirement, they could use that mechanism. The Council's intent under Amendment 8 was to have NMFS annually monitor the concentration of ITQ (as ITQ owners have to apply to NMFS to transfer ITQ) and if it seemed that excessive consolidation was occurring (i.e., an excessive share was being amassed), they would advise the U.S. Department of Justice (DOJ), which would then determine if antitrust laws were being violated (Joel McDonald Personal Communication, July 16, 2017).

[9] Northern Economics, Inc. 2019. Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council. March 2019.

[10] National Standard 4 states that '... *If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges*.'

As such, during the early period of the of the implementation of Amendment 8, the Council believed that NMFS could effectively monitor the concentration of ITQ ownership.

While the court case upheld Amendment 8 in 1991 - one year after the ITQ was implemented - it became clear over time to NMFS that this administrative process did not work. The creation of new business entities (e.g., LLC's, etc.) with ITQ ownership, and the lack of a regulatory mechanism (by NMFS) to identify corporate ownership or business partnerships across individuals or entities involved hampered the ability to determine whether there was a concentration of quota ownership, and whether competitive conditions were being eroded in the quota share market over time.[11] Therefore, the review of industry concentration could not be conducted.

NMFS recognized they could no longer conclude that the ITQ program was carried out in such a manner to prevent someone from acquiring an excessive share of the fishing privileges and advised the Council of these concerns. GC indicated that the Council needed to put at least two regulatory components in place: one to identify the individuals behind the corporate entities listed as the owner of the ITQ, and an ownership cap or other control mechanism to keep individuals from acquiring the level of ITQ ownership that the Council deems to be "excessive." [12] It is important to recognize that MSA did not address this issue by incorporating definitions from antitrust law or simply relying on enforcement of antitrust law. Rather, MSA used the term "excessive share" - a term left undefined in the statute. As noted in a 2007 NMFS guidance document on limited access privilege programs, while share levels exceeding antitrust standards would clearly represent an excessive share, factors such as other MSA requirements and National Standards can lead a Council to a more restrictive share limit than antitrust law may otherwise permit. [13]

During the development of alternatives for the Excessive Shares Amendment, staff at the Council and GARFO (including GC) spoke with the Antitrust Division of the DOJ about the role that they might play in the monitoring of excessive shares in the surfclam and ocean quahog fisheries. The DOJ indicated that their Business Review Process does provide pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for which the Business Review Process[14] has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment, making it an unfeasible vehicle for ongoing monitoring of quota share ownership.[15] For additional steps taken by the Council and NMFS regarding the excessive shares issue, see "Chronology of this Action" section below.

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[11] For example, one person could form a couple of corporations and hold and acquire ITQ and it could not be determined whether or not this represented an excessive share since the ITQs would appear to be owned by legally separate entities.

[12] As noted in the *Sea Watch International* case, even though the initial ITQ program relied upon existing antitrust law to define excessive shares, NMFS and the Council retained the ability to modify the FMP and associated regulations, "without the permission of the ITQ holders." 762 F. Supp. at 380.

[13] NOAA Technical Memorandum NMFS-F/SPO-86, The Design and Use of Limited Access Privilege Programs, at 53-60 (NMFS 2007).

[14] For a detailed description of the Business Review process of the DOJ see: https://www.justice.gov/atr/business-reviews

[15] Sarah Heil, letter to Chis Moore, PhD, June 1, 2018.

Chronology of this Action

This section presents in chronological order major steps taken by the Council and/or NMFS in addressing the excessive shares issue.

1990

- Surfclam and ocean quahog ITQ program is implemented.

2002

- Discussion of excessive shares in these fisheries began as early as December 2002 with a Government Accountability Office (GAO) report "Individual Fishing Quotas: Better Information Could Improve Program Management." [16] The December 2002 GAO report stated:
  - Surfclam and ocean quahog quota consolidation is greater than NMFS data indicate. According to NMFS officials and others knowledgeable about the fishery, the quota holder of record (i.e., the individual or entity under whose name the quota is listed) is often not the entity that controls the use of the quota. Some families hold quota under the names of more than one family member; some parent corporations hold quota under the names of one or more subsidiaries; some entities hold quota under the name of one or more incorporated vessels; and some financial institutions serve as transfer agents and hold quota on behalf of others or in lieu of collateral for loans.
  - The governing rules of each program may have affected the extent of consolidation and the information collected. However, without clear and accurate data on quota holders and fishery-specific limits on quota holdings, it is difficult to determine whether any quota holdings in a particular fishery would be viewed as excessive, as prohibited by the MSA.
  - NMFS does not gather sufficient information or periodically analyze the data it does collect on surfclam/ocean quahog and Wreckfish quota holders to determine (1) who actually controls the use of the quota and (2) whether the holder is a foreign individual or entity. Furthermore, while each fishery is different, the regional councils have not defined the amount of quota that constitutes an excessive share in the surfclam/ocean quahog and wreckfish IFQ programs. Different program objectives and the political, economic, and social characteristics of each fishery make it difficult to define excessive share. However, without the information on who controls quota and defined limits on quota accumulation, NMFS cannot determine whether eligibility requirements are being met or raise questions as to whether any quota holdings are excessive.

[16] The U.S. Government Accountability Office (GAO; https://www.gao.gov/) is an independent, nonpartisan agency that works for Congress. Often called the "congressional watchdog," GAO examines how taxpayer dollars are spent and provides Congress and federal agencies with objective, reliable information to help the government save money and work more efficiently.

2003

- In 2003, NMFS responded to several members of Congress about the GAO report. NMFS indicated that it would urge the Council to develop a plan amendment that limits the shares that an individual may hold.

2004

- A 2004 NMFS report (by Doug Christel) was written in response to the GAO report, and highlighted some of the additional information needs in these fisheries. "This report concludes that the degree of concentration in the ITQ program described by the GAO is due to the amount of information available. Current data collection by NMFS is insufficient to assess ownership concentration to the extent necessary to monitor excessive shares within the ITQ program. This is because limited information is collected on corporate structure or related business entities." In addition, "This report recommends that further information be collected regarding allocation ownership within the ITQ program."

2004 - 2011

- During this time period, several FMAT meetings were held to discuss this issue. Periodically, the Council was updated on FMAT activities. But during this time period, no decisions were made to move this action forward to the Council.

2011

- Compass Lexecon Report concluded that, "The evidence we analyzed does not support a conclusion that market power is currently being exercised through withholding of quota in the SCOQ [surfclam and ocean quahog fisheries]." However, the report indicates that, "We do not analyze whether market power is exercised through the withholding of harvesting or processing, or through exclusionary conduct other than conduct involving quota ownership."

- The Compass Lexecon Report was reviewed by the CIE. [Summary of Findings by the Center for Independent Experts Regarding Setting Excessive Share Limits for ITQ Fisheries. Northeast Fisheries Science Center Reference Document 11-22]. The review noted that:

  - Measures of industrial concentration in the surfclam and ocean quahog fisheries (the Herfindahl-Hirschman index or HHI) suggests that marketing power may exist in these fisheries, particularly in its harvesting and processing sectors, but less so in quota holdings. These concentration measures are only indicative of the possibility of market power. They do not establish that it actually exists.
  - Implementation of the method proposed by the Technical Group requires at least the following data: quota ownership and control, processing volumes and capacity, size of the relevant market.
  - The method proposed by the Technical Group is based on the HHI, which means that evaluation of potential market power is consistent with what is done in other industries. However, in order to apply the method, more data are needed along with a better understanding of the industry.

- The Technical Group should have paid more attention to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. This may be of greater concern than the monopoly problem.

2012

- The February 2012 Surfclam and Ocean Quahog Committee meeting discussed next steps for the then-numbered Amendment 15.
- At that meeting, GC Joel MacDonald advised that an information collection program could be implemented by NMFS without a Council FMP Amendment under authority granted in section 402(a) of the MSA.
- The Committee voted to split Amendment 15 into several parts: 1) move forward with cost recovery, EFH, and the ocean quahog biological reference point update in Amendment 15, 2) request that NMFS develop an information collection program, and 3) move development of an excessive shares cap to the next Amendment.

2013

- A "Data Collection Protocol" was developed for the Council to consider that would provide the data needed to understand ownership and control of the quota allocations in the surfclam and ocean quahog fisheries.
- The Council approved the "Data Collection Protocol."

2015

- The data collection protocol was implemented.

2016

- Ownership data collection began in 2016.

2017

- An FMAT was reformed to work on the Excessive Shares Amendment.

2018

- June 2018: Range of alternatives developed and presented to the Surfclam and Ocean Quahog Committee and Council.

2019

- March 2019: Surfclam and Ocean Quahog Advisory Panel and Committee provided feedback on the public hearing document.
- April 2019: Council reviewed public hearing document and instructed FMAT to make some modifications to the document and bring it back to the Committee for review.

5.0 MANAGEMENT ALTERNATIVES

This amendment considers a range of alternatives to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. This amendment also considers requirements for the periodic review of implemented excessive cap level. Lastly, this action considers revisions to the process for specifying multi-year management measures, and future framework actions to make modifications to the excessive shares cap level.

In recognition of the diversity of potential solutions to these goals, a range of possible options for management measures ("alternatives") were developed for consideration. This approach complies with the statutory requirements of the NEPA to include a "range of alternatives" when evaluating the environmental impacts of federal actions. Section 5.1 describes the excessive shares alternatives, section 5.2 describes the periodic excessive shares review alternatives, section 5.3 describes the framework alternatives, and section 5.4 describes multi-year management measures alternatives. In addition, several alternatives were considered by the Council and rejected for further analysis. These "considered but rejected" alternatives are described in section 5.5. The complete analyses of the biological, economic, and social impacts of the alternatives is presented in section 7.0 of this document.

Comprehensive descriptions of the current regulations for surfclam and ocean quahog as detailed in the Code of Federal Regulations (CFR) are available here: http://www.greateratlantic.fisheries.noaa.gov/regs/fr.html.

5.1 Excessive Share Alternatives

The Council is required to define measurable criteria for what constitutes an excessive share in the Atlantic surfclam and ocean quahog ITQ privileges, to ensure the FMP is compliant with the MSA (see section 4.1 for additional information).

At this point it is unclear, if any of the alternatives under consideration will result in the need for any individual, entity, or corporation to divest. Therefore, there are no alternatives in this document that describes specific divestment mechanisms in the event that an individual or entity has accumulated quota share ownership in excess of the quota ownership levels presented in the alternatives described below. However, the Council, can consider divestment mechanisms if they find this necessary, or they can leave it to NMFS to address divestment options and mechanism if they select an alternative that has ownership entities above the selected excessive shares cap.

The Compass Lexecon Report and associated Center for Independent Experts (CIE) review indicated a need for reliable information regarding both ownership and control of quota in the surfclam and ocean quahog fisheries. Information showing detailed quota transfers and ownership relationships among final quota holders is important in assessing ownership and control (Mitchell et al., 2011, Walden 2011).

Participants in these fisheries have reported that they are various types of transactions involving ITQs that commonly occur, including temporary and permanent ITQ transfers, long-term ITQ leases (e.g., five years or more) and transfers of bushel tags from bank lenders and between related

and unrelated business entities. As such, it is important to consider these complex contracting business practices that occur in these fisheries. Furthermore, as indicated in the Compass Lexecon Report:

> *"The need for harvesters to hold quota at the time of harvesting raises further complications: some harvesters own or contract for their own quota, whereas in other cases processors obtain quota and transfer it without charge to their harvesters (which may be [either] affiliated or independent). When the processor owns quota or contracts for quota on behalf of a harvester, the transfer data will show the quota has been transferred to a harvester, but will not show whether the processor retains control of the quota in such transactions ("control" in this context means the power to decide whether the quota will be used to harvest clams). A complete understanding of the actual ownership and control of quota requires analysis of the contracts under which quota were transferred to the final owner or holder. An additional problem arises from the reporting of quota when used. The owner of quota is supposed to report to NMFS the specific tags (quota) that are used throughout the season. However, in many instances, it is not the recorded owner but another entity that reports the quota used. This is most likely a problem with related entities reporting the use of quota, which is another aspect of determining final quota ownership or control"* (Mitchell et al. 2011).

The Atlantic Surfclam and Ocean Quahog Information Collection Program was designed to collect information to assess ownership and control of the quota following transfers in the surfclam and ocean quahog fisheries. However, some industry members have reported that they would not disclose specific details on long-term ITQ leases on those data collection forms,[17] as they see it as a confidential business practice. The ownership data collected for 2016 and 2017 includes very limited information on long-term leases, which suggests a lack of interest by industry members in reporting this information. Because of the lack of data to assess control from the context of "the power to decide whether the quota will be used to harvest clams," in this analysis combined "control" is used in the context of the possession of the cage tags, which is the power to decide if they will be used to harvest clams.[18]

5.1.1 Alternative 1: No Action/*Status Quo*

Under the no action alternative for excessive shares (alternative 1), the current management approach regarding excessive shares (i.e., share accumulation) would continue. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. The FMP would rely only on federal anti-trust provisions.

[17] Long-term contracts.

[18] In the scallop fishery, a similar concept is used to tabulate quota accumulation levels, that is, "if you touch it" (hold the tags), you have the ability to make decisions about whether those tags are fished or not.

5.1.2 Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)

Under alternative 2, a single quota share cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags)[19] throughout the year.[20] Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. Participants in these fisheries have reported that they are various types of transactions involving ITQs that commonly occur, including temporary and permanent ITQ transfers, long-term ITQ leases (e.g., five years or more) and transfers of bushel tags from bank lenders and between related and unrelated business entities.

This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

Note: The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and/or monitor any particular excessive shares cap level.[21]

5.1.2.1 Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 2.1, the single quota share caps would be based on the highest level of quota share held by an individual or entity reported in the ownership data[22] for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period,[23] as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. Note that the values in Tables 2 and 3 were rounded up for the monitoring process (e.g., 27.3 was rounded up to 28 and 27.7 was also rounded up to 28). These values were only rounded up because rounding down could potentially result in an existing entity being over the cap merely because of the rounding approach. The caps based on ownership data from 2016 to 2017 would be:

For surfclams –

- Option A: At the individual/business level, the cap would be 28% under all models
- Option B: At the family level, the cap would be 28% under all models

[19] There would be no limit of how much annual allocation (cage tags) an individual or entity could use or transfer during the fishing year.
[20] All excessive share alternatives are applicable throughout the year.
[21] See Definitions and Terminology at the end of Section 2.0 for more information on these choices. More detailed information on these choices is also found in section 7.0.
[22] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."
[23] On average, for the 2016-2017 period, 67% of the surfclam quota and 58% of the ocean quahog quota were landed (see Table 4 in section 6.0).

- Option C: At the corporate officer level, the cap would be 28% under all models

For ocean quahogs –

- Option A: At the individual/business level, the cap would be 22% under all models
- Option B: At the family level, the cap would be 22% under all models
- Option C: At the corporate officer level, the cap would be 22% under all models

If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in the fisheries (i.e., four large entities at 28%, 28%, 28%, and 16%). If fully consolidated , a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in the fisheries (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%).[24] The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.2.2 Sub-Alternative 2.2: Quota share cap at 49%

Under sub-alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.2.3 Sub-Alternative 2.3: Quota share cap at 95%

Under sub-alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

[24] The resulting number of minimum entities under excessive shares alternatives 2 through 4 assume that market demand equals supply. When this is not the case, the leasing market could be disrupted (because available quota is larger than product demand) which could result in smaller firms or entities not associated with a processor be driven out of business. In addition, it is also possible that under all alternatives evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

Table 2. Surfclam maximum quota share ownership and combined level (quota share ownership plus leasing of annual allocation or cage tags) at the individual/business level, family level, and corporate officer level for various data tabulation models, 2016-2017.

Surfclam Values							
Ownership Percentage Model		**Affiliation Levels**					
		Individual / Business Level		**Family Level** (individual / business level + family level)		**Corporate Officer Level** (individual / business level + family level + corporate officer level)	
		2016	**2017**	**2016**	**2017**	**2016**	**2017**
Net Actual Percentage	Owned	28	28	28	28	28	28
	Combined (Ownership + Leasing)	28	28	33	33	44	43
Cumulative 100% Model	Owned	28	28	28	28	28	28
	Combined (Ownership + Leasing)	48	46	49	47	49	47

Terminology

1) Net Actual Percentage Model - Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

2) Cumulative 100% Model - Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels: ***Individual/Business Level -*** Smallest unit at the individual level or business (if an individual owner cannot be identified); ***Family Level -*** Includes any family associations that are not already accounted at the individual business level; and ***Corporate Officer Level -*** Includes association through corporate officer's that are not accounted for in the other levels.

Source: Analysis and Program Support Division, Greater Atlantic Regional Fisheries Office (GARFO).

Table 3. Ocean quahog maximum quota ownership and combined level (quota share ownership plus leasing of annual allocation or cage tags) at the individual/business level, family level, and corporate officer level for various data tabulation models, 2016-2017.

Ocean Quahog Values							
Ownership Percentage Model		**Affiliation Levels**					
		Individual / Business Level		**Family Level** (individual / business level + family level)		**Corporate Officer Level** (individual / business level + family level + corporate officer level)	
		2016	**2017**	**2016**	**2017**	**2016**	**2017**
Net Actual Percentage	Owned	22	22	22	22	22	22
	Combined (Ownership + Leasing)	29	25	29	28	37	39
Cumulative 100% Model	Owned	22	22	22	22	22	22
	Combined (Ownership + Leasing)	38	41	38	41	38	41

Terminology

1) Net Actual Percentage Model - Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.

2) Cumulative 100% Model - Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.

Affiliation Levels: ***Individual/Business Level -*** Smallest unit at the individual level or business (if an individual owner cannot be identified); ***Family Level -*** Includes any family associations that are not already accounted at the individual business level; and ***Corporate Officer Level -*** Includes association through corporate officer's that are not accounted for in the other levels.

Source: Analysis and Program Support Division, Greater Atlantic Regional Fisheries Office (GARFO).

5.1.3 Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)

Under alternative 3, a cap based on combined values for quota share ownership plus leasing of annual allocation (cage tags) would be established separately for surfclams and ocean quahogs. Since the cap under this alternative is based on ownership plus leasing of annual allocation (cage tags), it accounts for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing)[25] that are prevalent in the fisheries when setting the cap limit.

5.1.3.1 Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 3.1, the combined caps would be based on the highest level of quota share ownership plus leasing of annual allocation (cage tags) by an individual or entity reported in the ownership data[26] for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period, as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The combined caps under this alternative would depend on the determination of combined levels (quota share ownership plus cage tag leasing) under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The combined caps based on ownership data from 2016 to 2017 would be:

For surfclams -

- Option A: At the individual/business level, the cap would be:
  - 28% under the combined net actual percentage model
  - 48% under the combined cumulative 100% model
- Option B: At the family level, the cap would be:
  - 33% under the combined net actual percentage model
  - 49% under the combined cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 44% under the combined net actual percentage model
  - 49% under the combined cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
  - 29% under the combined net actual percentage model
  - 41% under the combined cumulative 100% model
- Option B: At the family level, the cap would be:

[25] The Compass Lexecon Report and CIE review indicated a need for reliable information regarding both ownership and control of quota in the surfclam and ocean quahog fisheries. Information showing detailed quota transfers and ownership relationships among final quota holders is important in assessing ownership and control (Mitchell et al., 2011, Walden 2011).

[26] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

    - 29% under the combined net actual percentage model
    - 41% under the combined cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
    - 39% under the combined net actual percentage model
    - 41% under the combined cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.3.2 Sub-Alternative 3.2: Combined cap at 40%

Under sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.3.3 Sub-Alternative 3.3: Combined cap at 49%

Under sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.4 Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)

Under alternative 4, a two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of

market power that could be derived through both quota ownership and contractual control of quota. Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex contracting business practices that occur in these fisheries**.**

5.1.4.1 Sub-Alternative 4.1: Two-part cap based on highest level in the ownership data, 2016-2017

Under sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage tags) would be based on the highest levels reported in the ownership data[27] for each fishery (i.e., surfclams and ocean quahogs) the 2016-2017 period, as described below. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The two-part cap based on ownership data from 2016 to 2017 would be:

For surfclams -

- Option A: At the individual/business level, the cap would be:
  - 28% ownership / 28% combined under the net actual percentage model
  - 28% ownership / 48% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 28% ownership / 33% combined under the net actual percentage model
  - 28% ownership / 49% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 28% ownership / 44% combined under the net actual percentage model
  - 28% ownership / 49% combined the cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
  - 22% ownership / 29% combined under the net actual percentage model
  - 22% ownership / 41% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 22% ownership / 29% combined under the net actual percentage model
  - 22% ownership / 41% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 22% ownership / 39% combined under the net actual percentage model
  - 22% ownership / 41% combined the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual

[27] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.4.2 Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation

Under sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data[28] for each fishery (i.e., surfclams and ocean quahogs) during the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for 2016-2017 to allow for additional consolidation (Tables 2 and 3). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. As with sub-alternative 4.1, the two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3. The two-part cap based on ownership data from 2016 to 2017 would be:

(*Note: these values were calculated by adding 15% for anticipated growth to the values presented under sub-alternative 4.1*)

For surfclams -

- Option A: At the individual/business level, the cap would be:
  - 43% ownership / 43% combined under the net actual percentage model
  - 43% ownership / 63% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 43% ownership / 48% combined under the net actual percentage model
  - 43% ownership / 64% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 43% ownership / 59% combined under the net actual percentage model
  - 43% ownership / 64% combined under the cumulative 100% model

For ocean quahogs -

- Option A: At the individual/business level, the cap would be:
  - 37% ownership / 44% combined under the net actual percentage model
  - 37% ownership / 56% combined under the cumulative 100% model
- Option B: At the family level, the cap would be:
  - 37% ownership / 44% combined under the net actual percentage model
  - 37% ownership / 56% combined under the cumulative 100% model
- Option C: At the corporate officer level, the cap would be:
  - 37% ownership / 54% combined under the net actual percentage model

[28] The term "Ownership Data" is used interchangeably with the "Atlantic Surfclam and Ocean Quahog Information Collection Program Data."

- 37% ownership / 56% combined under the cumulative 100% model

The potential resulting number of minimum entities (if fully consolidated) would vary depending on the model and affiliate level chosen. The Council needs to choose a specific affiliate level (e.g., individual/business, family, or corporate officer) and model (cumulative 100% model or net actual percentage model) to implement and monitor a specific cap under this alternative. The resulting number of minimum entities under each scenario are presented in section 7.0.

5.1.4.3 Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%

Sub-Alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. This alternative could potentially result in a minimum of four entities (if fully consolidated) participating in the fisheries (i.e., four large entities at 30%, 30%, 30%, and 10% ownership quota share cap). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

5.1.5 Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Under alternative 5, the cap would be 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags), plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the annual catch target (ACT) or overall quota level and A shares. B shares are not released until all A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

The 40% cap under this alternative is based on recommendations found in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). “In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails.” And “An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels” (Walden 2011).

This alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). The FMAT noted that the “two-part system” (i.e., cap on ownership plus Quota

A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of Quota A and Quota B shares is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. Lastly, this alternative could potentially result in a minimum of three large entities (if fully consolidated) participating in the fisheries (i.e., 40%, 40%, and 20%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

Box 5.1.5 below shows a hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work the first year of implementation (year 4) for surfclams and ocean quahogs. In this example, the same overall quota levels that have been in place for surfclams and ocean quahogs for the past 15 years are used in year 4. In addition, under this example a 3-year average (for years 1-3) is used to derive Quota A shares for year 4. The difference between the overall ACT level and Quota A shares for year 4 is used to determine the Quota B shares level for that year.

As shown in Box 5.1.5, the overall quota allocated to each fishery in bushels or number of issued cage tags do not change in year 4 when compared to prior years. However, while in years 1-3, the overall number of cage tags issued to each fishery (i.e., corresponding to the quota for each fishery; 106,250 cage tags for surfclams and 166,656 cage tags for ocean quahogs) would be released at the onset of the fishing year, under this alternative, only the Quota A shares and associated number of cage tags for that quota would be released at the onset of the fishing year and Quota B shares would be released when Quota A shares are used/exhausted.[29] As an example, for surfclams, Quota A shares, 2.352 million bushels or 73,500 cage tags would be released at the beginning on the fishing year 4, when this quota and associated number of cage tags have been used, then Quota B shares of 1.048 million bushels or 32,750 cage tags would be released that same fishing year (year 4). While under this alternative, the release of the quota (and associated cage tags) is split into two components (Quota A shares and Quota B shares), the overall quota level and number of cage tags available during the entire fishing year 4 is identical to that from prior fishing years (years 1-3).

[29] If this alternative is implemented, NMFS will have to determine how to release Quota B shares to allocation holders at the time the B shares are released.

Box 5.1.5. Hypothetical derivation of Quota A shares and Quota B shares (and cage tags) for surfclams and ocean quahogs under alternatives 5 and 6.				
Year	**Quota Million bushels**	**Landings Million bushels**	**Quota A shares Million bushels**	**Quota B shares Million bushels**
Atlantic surfclams				
1	3.400 (106,250 cage tags)	2.364 (73,875 cage tags)	NA	NA
2	3.400 (106,250 cage tags)	2.354 (73,563 cage tags)	NA	NA
3	3.400 (106,250 cage tags)	2.339 (73,094 cage tags)	NA	NA
4	3.400 (106,250 cage tags)	NA	2.352 (73,500 cage tags)	1.048 (32,750 cage tags)
Ocean quahogs				
1	5.333 (166,656 cage tags)	3.196 (99,875 cage tags)	NA	NA
2	5.333 (166,656 cage tags)	3.007 (93,968 cage tags)	NA	NA
3	5.333 (166,656 cage tags)	3.075 (96,094 cage tags)	NA	NA
4	5.333 (166,656 cage tags)	NA	3.093 (96,656 cage tags)	2.240 (70,000 cage tags)

NA = not applicable or not available.

5.1.6 Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Under alternative 6, the cap would be 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) plus, Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT or overall quota level and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

The two-tier quota under this alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011).

The FMAT noted that the "two-part system" (i.e., cap on ownership plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of Quota A and Quota B shares is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway

through the fishing year. Lastly, this alternative could potentially result in a minimum of three entities (if fully consolidated) participating in the fisheries (i.e., two large entities and one small entity at 49%, 49%, and 2%). The Council needs to choose which affiliate level (individual/business level, family level, or corporate officer level (e.g., chief executive officer or CEO)) and model (cumulative 100% model or net actual percentage model) will be used to monitor and enforce this cap.

For a hypothetical example of how the two quota-tier system (Quota A shares and Quota B shares) would work for surfclams and ocean quahogs see section 5.1.5 above.

5.2 Excessive Shares Review Alternatives

5.2.1 Alternative 1: No Action/*Status Quo* (Review Process)

Under the no action alternative for excessive shares review (alternative 1), there would not be a requirement for periodic review of implemented excessive shares measures.

5.2.2 Alternative 2: Require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed

Allowing for a periodic review of excessive shares measures that the Council adopts would permit the Council to revise these measures if conditions in the fisheries change over time. Conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure or specific cap level established at an appropriate level now could over time become inefficiently high or low.

In order to facilitate any necessary modifications to the cap levels, the Council could recommend adding modification of the cap levels to the list of management actions that could be implemented via the framework adjustment process (alternative 5.3). However, if major changes to the overall excessive shares measures are needed, an amendment process will likely be needed.

This alternative would provide an enforceable provision for regular review and evaluation of the performance of the cap for the surfclam and ocean quahog ITQ fisheries. However, this alternative does not preclude the Council reviewing any implemented excessive shares measures before the official review time period (i.e., 10 year review period).

5.3 Framework Adjustment Process Alternatives

A framework is an action that adjusts measures that are within the scope and criteria established by the FMP within a range as defined and analyzed in the FMP. Amendment 12 to the Surfclam and Ocean Quahog FMP implemented a framework adjustment process that allows management measures to be added or modified through this streamline public process (MAFMC 1998b). The range of frameworkable management measure were subsequently revised in Amendment 16 to the FMP (MAFMC 2011). The list of possible management measures to be addressed via the framework adjustment process included in the FMP include (50 CFR §648.79):

- Adjustments within existing ABC control rule levels
- Adjustments to the existing MAFMC risk policy
- Introduction of new AMs, including sub-ACTs
- Description and identification of EFH (and fishing gear management measures that impact EFH)
- Habitat areas of particular concern
- Set-aside quota for scientific research
- VMS
- Suspension or adjustment of the surfclam minimum size limit

Frameworks typically take a minimum of 1-year to be completed; with a minimum of two framework meetings and approximately 4-6 months for rulemaking and implementation. Adding measures as frameworkable under the FMP in order to address potential future changes may provide for efficiencies in the process.

5.3.1 Alternative 1: No Action/*Status Quo* (Framework Adjustment)

Under the no action alternative (alternative 1), the list of management measures that have been identified in the FMP that could be implemented or adjusted via the framework adjustment process would remain unmodified.

5.3.2 Alternative 2: Add excessive shares cap levels to the list of measures to be adjusted via framework

This alternative would expand of the list of framework adjustment measures that have been identified in the FMP. The ITQ program measure that would be added to the list is: 1) excessive shares cap level.

This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap), only if the modification would not result in an entity having to divest. Including this measure would provide flexibility to managers to make changes to the caps in a timely manner. The impacts of any future framework action related to the excessive cap level would be analyzed through a separate action, which would include public comment opportunities and documentation of compliance with all applicable laws.

5.4 Multi-Year Management Measures Alternatives

Surfclam and ocean quahog regulations allow multi-year annual quota specification to be set for up to 3 years at a time (CFR §648.71 and 648.72). Therefore, current regulations allow, but do not obligate the Council to specify commercial quotas and other management measure for up to 3 years. Multi-year regulations have been implemented for all fisheries managed by the MAFMC to relieve administrative demands on the Council and NMFS imposed by annual specification requirements. Longer term specifications provide greater regulatory consistency and predictability to the fishing sectors.

Specifications of annual quotas are prepared in the final year of the quota period, unless there is a need for an interim quota modification. It is also stipulated in the regulations that on an annual basis, the MAFMC staff produce and provide to the Council an Atlantic surfclam and ocean quahog annual quota recommendation paper based on the ABC recommendation of the Scientific and Statistical Committee (SSC), the latest available stock assessment report prepared by NMFS, data reported by harvesters and processors, and other relevant data. Based on that report, and at least once prior to August 15 of the year in which a multi-year annual quota specification expires, the MAFMC, following an opportunity for public comment, will recommend to the Regional Administrator annual quotas and other management measures.

5.4.1 Alternative 1: No Action/*Status Quo* (Multi-Year Measures)

Under this no action alternative for multi-year management measures (alternative 1), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years.

Regulations for the surfclam and ocean quahog specifications setting process at 50 CFR §648.72, stipulate that annual catch quotas can be established for up to a 3-year period. The specifications setting process is described in detail above.

5.4.2 Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule

Under alternative 2, specifications could be set for a period up to the maximum number of years consistent with the NRCC-approved stock assessment schedule.[30] This alternative would provide additional flexibility as specifications could be set until a new surfclam and/or ocean quahog stock assessment is produced. New specifications of annual quotas would be prepared in the final year of the quota period, unless there is a need for interim quota modifications. Council staff would coordinate with Northeast Fisheries Science Center (NEFSC) staff, during the first quarter of each year (during the multi-year specifications period) to assess whether there is any relevant information regarding these fisheries that need to be addressed or used to produce interim quota modifications. The results would be provided to the Council in a memorandum. In the year in which a multi-year annual quota specifications expire, Council staff would produce a fishery information document and specification recommendation memorandum (as is done for all the Council managed FMPs) to provide to the SSC and the Council.

Lastly, under the current regulations at §648.72, there is some terminology (or outdated regulatory language) that is no longer used when deriving catch and landings limits for these species (e.g., DAH or Domestic Annual Harvest; DAP or Domestic Annual Processing) that would be removed from the regulations under this alternative. In addition, the requirements for the contents of annual quota reports are not consistent with the current process for setting catch and landings limits based off the stock assessment (i.e., outdated terminology), therefore that language would be revised to reflect current practices for development of fishery information documents and recommendations memorandum.

[30] For example, under the current schedule, new survey information will be available every 4 years for surfclams and every 6 years for ocean quahogs, after which a stock assessment may be conducted.

None of the other existing catch and landings limits regulations, accountability measures, reporting requirements or ITQ system management procedures will change under alternative 2.

5.5 Alternatives Considered but Rejected from Further Analysis

Since the initiation of this amendment, the Council considered a range of different alternatives to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges corresponding to the purpose and need statements described in section 4.1. To address these need statements, the Council considered various approaches. Concepts or options that were discussed but rejected from further consideration, are described below for joint ventures (section 5.5.1) and other excessive shares cap levels (5.5.2 and 5.5.3).

5.5.1 Allow for Joint Ventures in these fisheries

The surfclam and ocean quahog harvest levels have been well below the quota levels established for those fisheries for many years (see Table 4 in section 6.0). This alternative could allow for additional product to be sold and competition increased. For example, the FMAT initially discussed the possibility of joint ventures with foreign partners in which clams harvested by the United States fishermen could be delivered to foreign processing vessels in the EEZ. This alternative was considered but rejected by the Council for further analysis as it was deemed impractical for these fisheries (e.g., perishable nature of the product; ITQ system that requires cages to be landed with tags, etc.). In addition, some industry representatives indicated that they would not like to sell their clams to international companies competing with their interests.

5.5.2 Set the cap at a specific level. But allow for opportunity for further consolidation upon review by NMFS

Conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure or specific cap level established at an appropriate level now could over time become inefficiently high or low. This alternative would allow any entity or firm to request NMFS to review information (e.g., excessive shares cap level, market conditions, other relevant information) to assess if further consolidation (beyond any Council implemented excessive cap share level) was warranted for that entity or firm. This alternative was considered but rejected for further consideration as it would require a large amount of data to be provided by the industry; including confidential data on production costs, profitability, production capacity, etc. This information is not presently available to NMFS. In addition, this alternative would also require extensive review and analysis by the NEFSC Social Science Branch, making this approach impractical from the Council's perspective.

5.5.3 Use the seven steps on excessive shares proposal developed presented in the Compass Lexecon Report

The seven steps on the excessive shares proposal presented in the Compass Lexecon Report includes the use of the HHI, assessment of the breadth of the market, the scope and quantity of

substitute products, the level of excess capacity, the degree of product heterogeneity, the relative bargaining power of buyers and sellers, the ability to price discriminate, ease of entry, and efficiencies -or economies of scale, the size of the fringe, and the sources of supply to processors (Mitchell et al. 2011, Walden 2011). However, the FMAT indicated that this methodology requires a large amount of quantitative information that is not currently available and would also require frequent revision of caps due to changes in market dynamics. Therefore, the Council determined that this approach is impractical.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The affected environment consists of those physical, biological, and human components of the environment expected to experience impacts if any of the actions considered in this document were to be implemented. This document focuses on four aspects of the affected environment, which are defined as valued ecosystem components (VECs).

The VECs include:

- Managed species (i.e., Atlantic surfclam and ocean quahog) and non-target species
- Physical habitat
- Protected species
- Human communities

The following sections describe the recent condition of the VECs.

6.1 Managed Resources and Non-Target Species

6.1.1 Description of the Fisheries

The management unit is all Atlantic surfclam (*Spisula solidissima*) and ocean quahog (*Arctica islandica*) in the Atlantic EEZ. The commercial fisheries for surfclam and ocean quahog are fully described in the document titled "Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council" (Northern Economics, Inc. 2019). Clam dredges (a bottom tending mobile gear) are utilized in the commercial fisheries for both species. An overview of commercial landings for both species is provided in Table 4 (in section 6.1.1.1.2 below).

Additional information on these fisheries can be found in Council meeting materials available at: http://www.mafmc.org.

6.1.1.1 Basic Biology

6.1.1.1.1 Atlantic Surfclam

Information on Atlantic surfclam biology can be found in the document titled, "Essential Fish Habitat Source Document: Surfclam, *Spisula solidissima*, Life History and Habitat Requirements" (Cargnelli et al. 1999a). An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh. Additional information on this species is available at the following website: http://www.fishwatch.gov. A summary of the basic biology is provided below.

Atlantic surfclams are distributed along the western North Atlantic Ocean from the southern Gulf of St. Lawrence to Cape Hatteras. Surfclams occur in both the state territorial waters (≤ 3 miles from shore) and within the EEZ (3-200 miles from shore). Commercial concentrations are found primarily off New Jersey, the Delmarva Peninsula, and on Georges Bank. In the Mid-Atlantic

region, surfclams are found from the intertidal zone to a depth of about 60 meters (197 ft), but densities are low at depths greater than 40 meters (131 ft).
The maximum size of surfclams is about 22.5 cm (8.9 inches) shell length, but surfclams larger than 20 cm (7.9 inches) are rare. The maximum age exceeds 30 years and surfclams of 15-20 years of age are common in many areas. Surfclams are capable of reproduction in their first year of life, although full maturity may not be reached until the second year. Eggs and sperm are shed directly into the water column. Recruitment to the bottom occurs after a planktonic larval period of about three weeks.

Atlantic surfclams are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of surfclams include certain species of crabs, sea stars, snails, and other crustaceans, as well as fish predators such cod and haddock.

6.1.1.1.2 Ocean Quahog

Information on ocean quahog biology can be found in the document titled, "Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Requirements" (Cargnelli et al. 1999b). An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh. Additional information on this species is available at the following website: http://www.fishwatch.gov. A summary of the basic biology is provided below.

The ocean quahog is a bivalve mollusk distributed in temperate and boreal waters on both sides of the North Atlantic Ocean. In the Northeast Atlantic, quahogs occur from Newfoundland to Cape Hatteras from depths of about 8 to 400 meters. Ocean quahogs further north occur closer to shore. The U.S. stock resource is almost entirely within the EEZ (3-200 miles from shore), outside of state waters, and at depths between 20 and 80 meters. However, in the northern range, ocean quahogs inhabit waters closer to shore, such that the state of Maine has a small commercial fishery which includes beds within the state's territorial sea (< 3 miles). Ocean quahogs burrow in a variety of substrates and are often associated with fine sand.

Ocean quahogs are one of the longest-living, slowest growing marine bivalves in the world. Under normal circumstances, they live to more than 100 years old. Ocean quahogs of the coast of the US have been aged well in excess of 200 years. Growth tends to slow after age 20, which corresponds to the size currently harvested by the industry (approximately 3 inches). Size and age at sexual maturity are variable and poorly known. Studies in Icelandic waters indicate that 10, 50, and 90 percent of female ocean quahogs were sexually mature at 40, 64 and 88 mm (1.5, 2.5 and 3.5 inches) shell length or approximately 2, 19 and 61 years of age. Spawning occurs over a protracted interval from summer through autumn. Free-floating larvae may drift far from their spawning location because they develop slowly and are planktonic for more than 30 days before settling. Major recruitment events appear to be separated by periods of decades.

Based on their growth, longevity and recruitment patterns, ocean quahogs are relatively unproductive and able to support only low levels of fishing. The current resource consists of individuals that accumulated over many decades.

Ocean quahogs are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of ocean quahogs include certain species of crabs, sea stars, and other crustaceans, as well as fish species such as sculpins, ocean pout, cod, and haddock.

Table 4. Federal Surfclam and Ocean Quahog Quotas and Landings: 1998 - 2020.

	Surfclam ('000 bu)			Ocean Quahog ('000 bu)		
Year	**Landings[a]**	**Quota**	**% Harvested**	**Landings[b]**	**Quota**	**% Harvested**
1998	2,365	2,565	92%	3,946	4,000	99%
1999	2,539	2,565	99%	3,832	4,500	85%
2000	2,566	2,565	100%	3,246	4,500	72%
2001	2,855	2,850	100%	3,763	4,500	84%
2002	3,113	3,135	99%	3,957	4,500	88%
2003	3,241	3,250	100%	4,148	4,500	92%
2004	3,138	3,400	92%	3,892	5,000	78%
2005	2,744	3,400	81%	3,006	5,333	56%
2006	3,057	3,400	90%	3,147	5,333	59%
2007	3,231	3,400	95%	3,431	5,333	64%
2008	2,919	3,400	86%	3,467	5,333	65%
2009	2,602	3,400	77%	3,463	5,333	65%
2010	2,332	3,400	69%	3,591	5,333	67%
2011	2,443	3,400	72%	3,160	5,333	59%
2012	2,341	3,400	69%	3,497	5,333	66%
2013	2,406	3,400	71%	3,245	5,333	61%
2014	2,364	3,400	70%	3,196	5,333	60%
2015	2,354	3,400	69%	3,007	5,333	56%
2016	2,339	3,400	69%	3,075	5,333	57%
2017	2,192[c]	3,400	64%[c]	3,172[c]	5,333	59%[c]
2018	NA	3,400	NA	NA	5,333	NA
2019	NA	3,400	NA	NA	5,333	NA
2020	NA	3,400	NA	NA	5,333	NA

[a] 1 surfclam bushel is approximately 17 lb. [b] 1 ocean quahog bushel is approximately 10 lb. [c] Preliminary, incomplete 2017 data. NA = Not yet available. Source: NMFS Clam Vessel Logbook Reports.

6.1.2 Description of the Stock (Including Status, Stock Characteristics, and Ecological Relationships)

Reports on stock status, including SAW/SARC (Stock Assessment Workshop/Stock Assessment Review Committee) reports, and assessment update reports are available online at the NOAA NEFSC website: http://www.nefsc.noaa.gov/. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

6.1.2.1 Atlantic Surfclam

The Atlantic surfclam stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 61 (SAW 61; NEFSC 2017a). A statistical catch at age and length model called Stock Synthesis was used. Reports on "Stock Status," including assessment and reference point updates, SAW reports, and SARC panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

New reference points were developed for SAW 61 which are more justified scientifically. The new biomass reference points and measures of stock biomass are ratios rather than absolute biomass in weight. This approach allows for conclusions about the status of the surfclam stock despite substantial uncertainty in the actual biomass of the stock (NEFSC 2017a).

The Atlantic surfclam stock was not overfished in 2015 (Figure 1; NEFSC 2017a). Based on recommended reference points for the whole stock which use spawning stock biomass (SSB), estimated $SSB_{2015}/SSB_{Threshold} = 2.54$ (probability overfished < 0.01). For surfclam, SSB is almost equal to total biomass. Trends expressed as the ratio $SSB/SSB_{Threshold}$ are more reliably estimated than SSB. For the whole stock, relative SSB ($SSB/SSB_{Threshold}$) declined during the last fifteen years but is still above the target.

Overfishing did not occur in 2015 (Figure 2; NEFSC 2017a). Based on new recommended reference points, estimated $F_{2015}/F_{Threshold} = 0.295$ (probability overfishing < 0.01). Trends expressed as the ratio $F/F_{Threshold}$ are more reliably estimated than absolute fishing mortality rates. For the whole stock the trend in relative F ($F/F_{Threshold}$) generally increased during the last fifteen years (despite recent declines in the south) but is still below the threshold.

Trends expressed as the ratio of recruitment (R) and mean recruitment in an unfished stock (R_0) are more reliably estimated than absolute recruitment (Figure 3; NEFSC 2016). The trend in relative recruitment is measured using the ratio R/R_0. Recruitment generally increased over the last decade, and in 2015 R/R_0 was 0.57 in the north, 0.97 in the south, and 0.75 for the stock as a whole, indicating recruitment in 2015 was about 57%, 97% and 75% of the maximum long-term average in the three regions. These recruitment patterns are probably normal in a surfclam stock at relatively high biomass and with low fishing mortality. Recruitment for the whole stock is measured as the geometric mean of R/R_0 in the northern and southern areas and is more uncertain than estimates for either area.

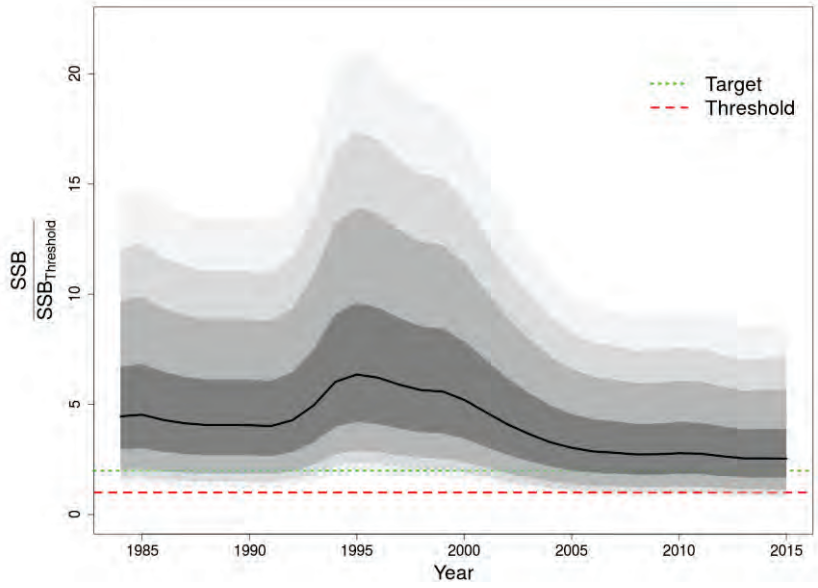


Figure 1. Trends in relative spawning stock biomass (SSB/SSB$_{Threshold}$) for the whole Atlantic surfclam stock during 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The green short-dash line at SSB/SSB$_{Threshold}$ = 2 is the management target. The red long-dash line at SSB/SSB$_{Threshold}$ = 1 is the level that defines an overfished stock* (NEFSC 2017a).

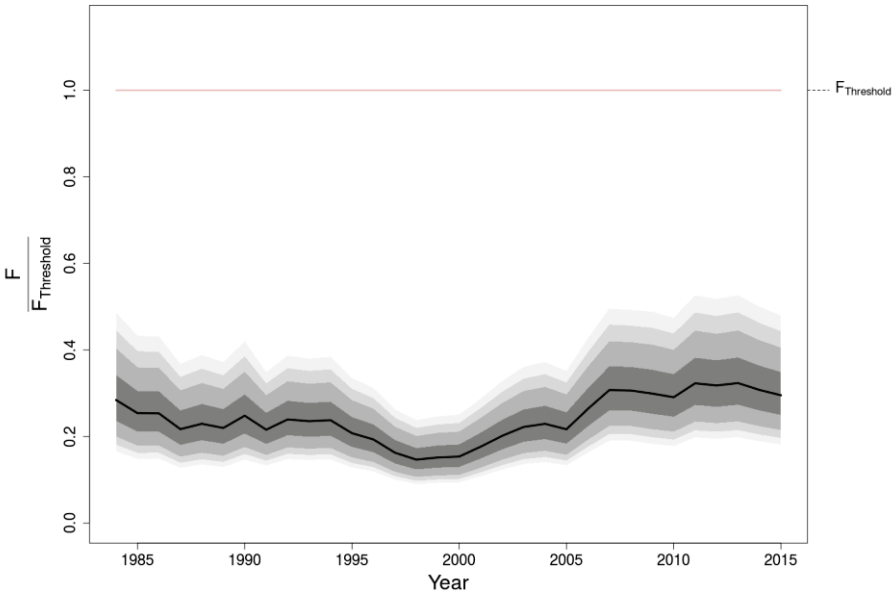


Figure 2. Trends in relative fishing mortality F/F$_{Threshold}$ for the whole Atlantic surfclam stock 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The solid line at F/F$_{Threshold}$ = 1 is the new fishing mortality threshold reference point* (NEFSC 2017a).

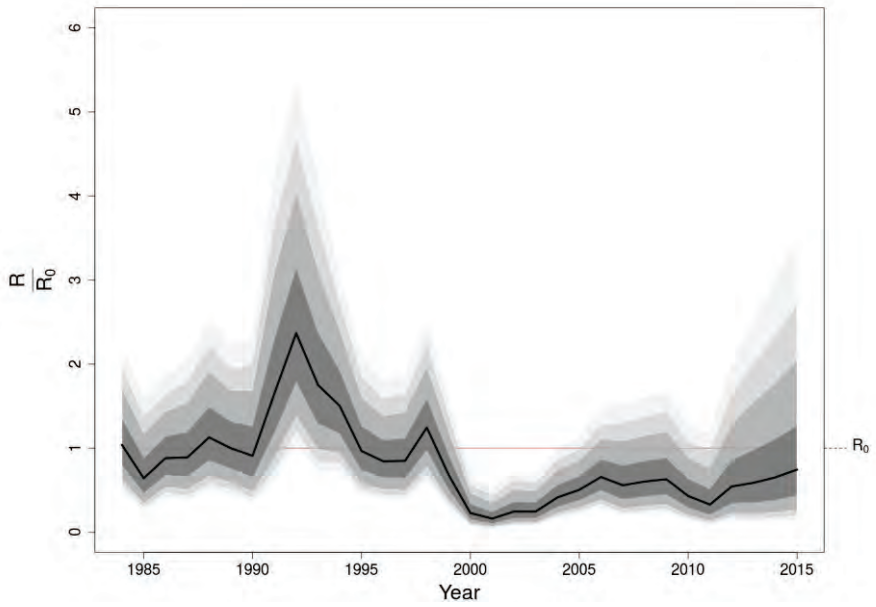


Figure 3. Trends in relative recruitment (R/R_0 for age zero recruits) for the whole Atlantic surfclam stock during 1984-2015. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The horizontal line is mean recruitment in an unfished stock* (NEFSC 2017a).

6.1.2.2 Ocean Quahog

The ocean quahog stock assessment was peer reviewed and approved for use by management at Stock Assessment Workshop 63 (SAW 63; NEFSC 2017b). A statistical catch at length model called Stock Synthesis was used. Reports on "Stock Status," including assessment and reference point updates, SAW reports, and SARC panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

The ocean quahog was not overfished in 2016 (Figure 4; NEFSC 2017b). Based on SAW 63 reference points from the 2017 assessment for the stock, estimated $SSB_{2016}/SSB_{Threshold} = 2.04$ (probability overfished < 0.01), where SSB is spawning stock biomass.

Overfishing did not occur in 2016 (Figure 5; NEFSC 2017b). Based on SAW 63 reference points, estimated $F_{2016/FThreshold} = 0.246$ (probability overfishing < 0.01), where F is fishing mortality rate.

There is little information about annual recruitment variability for ocean quahog. Model estimated recruitment has been stable and near unfished recruitment levels since 2000 (NEFSC 2017b).

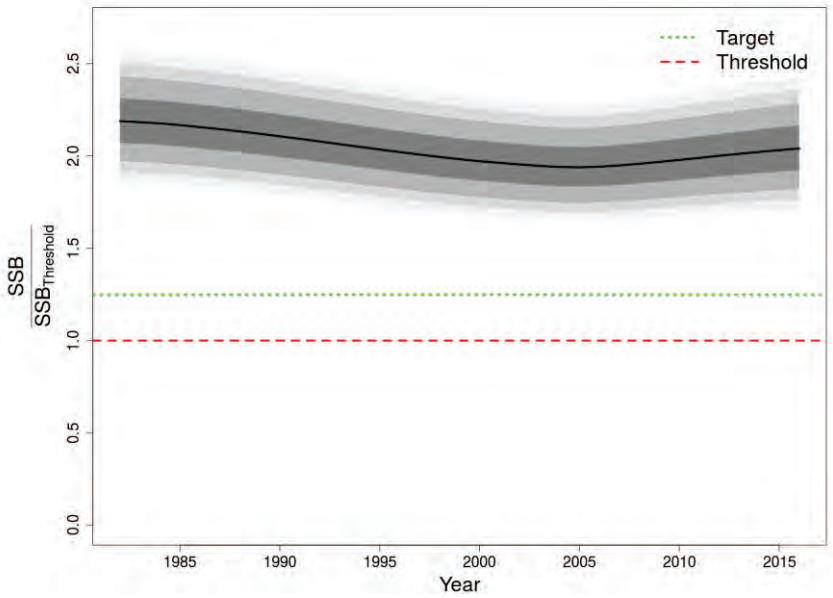


Figure 4. Trends in relative spawning stock biomass (SSB/SSB$_{Threshold}$) for the whole ocean quahog stock during 1982-2016. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The green short-dash line at SSB/SSB$_{Threshold}$ = 1.25 is the management target. The red long-dash line at SSB/SSB$_{Threshold}$ = 1 is the level that defines an overfished stock* (NEFSC 2017b).

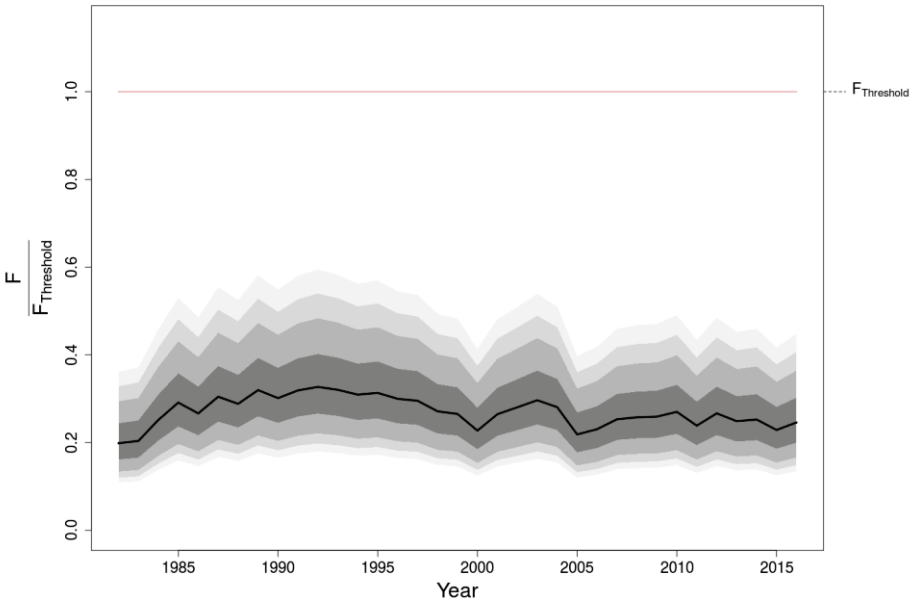


Figure 5. Trends in relative fishing mortality F/F$_{Threshold}$ for ocean quahog stock 1982-2016. *The solid line shows estimates from this assessment with approximate 50, 80, 90, and 95th percentile lognormal confidence intervals in shades of grey. The solid line at F/F$_{Threshold}$ = 1 is the new fishing mortality threshold reference point* (NEFSC 2017b).

6.1.3 Non-Target Species

Non-target species are those species caught incidentally while targeting other species. Non-target species may be retained or discarded.

The estimated bycatch of non-targeted species by the surfclam and ocean quahog fisheries based on observer data from 2016 was provided by Toni Chute (Personal Communication, November 15, 2017).

There were 15 observed ocean quahog trips (out of a total of 957 trips, so 1.6% of trips were observed) and 28 observed surfclam trips (out of a total of 2,414, so 1.2% percent of trips were observed) in 2016. All species or species categories caught in the dredge, brought on board, and noted and weighed by observers during normal dredging operations are listed in Tables 5 and 6. For the 2016 observed hauls, the protocol for the observers was to stand along the conveyor belt after the catch had passed over the shaker table and move non-target species from the belt into baskets for weight. Bycatch types that were not informative (such as "invertebrate, unclassified") or inanimate (shell, debris) are not shown. The dominant bycatch species include sea scallops, skates, monkfish, stargazers, crabs, and snails. The surfclam fishery also discards ocean quahogs, and the ocean quahog fishery discards surfclams.

Table 7 shows estimates of total fisheries bycatch/discard in 2016 based on the observer data. The weight of each species caught during observed hauls (including the target species) was totaled, then the amount of each non-targeted species was divided by the amount of target species caught, converted to meat weights, to determine a discard/kept (d/k) ratio for that species. Non-targeted species that were kept in small amounts (usually scallops, monkfish, and flatfish) were treated as discard for the purpose of estimating total bycatch. The d/k ratio for each bycatch species was then multiplied by the total landings of the target species in 2016 in meat weights to estimate bycatch. For example, if the catch from observed surfclam trips totaled 100 tons of surfclam meats and 1 ton of scallops, the calculated d/k ratio for scallops based on observer data would be 0.01 or 1/100. If the surfclam fishery for that year landed 1,000 tons of surfclam meats, then 1,000 tons multiplied by the d/k ratio of 0.01 for scallops estimates that about 10 tons of scallops were caught and discarded by the surfclam fishery. Only the amount of bycatch was estimated - no assumptions were made about discard mortality or incidental mortality. Bycatch species that were estimated to be less than 100 pounds in total over the year are not shown.

It is important to note that specific bycatch types were highly variable. A few hauls where a significant weight of a certain bycatch species was caught influence the annual estimates. Using mean catch per trip of all the bycatch species overestimates total bycatch by assuming all the species are caught in every trip. Tables 8 and 9 list the amounts and types of bycatch reported from individual trips to show variability between trips.

Lastly, there were small quantities of ocean quahogs caught in observed surfclam trips and vice versa. In all, ocean quahogs contributed with 0.65% of the total catch on observed surfclam trips and surfclams contributed with 0.48% of the total catch on observed ocean quahog trips.

Table 5. Total weights of species caught during all observed ocean quahog hauls in 2016, and their percentage of both total catch and un-targeted catch.

Ocean quahog fishery			
Number of observed trips	15		
Number of observed hauls	370		
Species caught	**Weight (lbs)**	**% of total catch**	**% of un-targeted catch**
Ocean quahog (round weight)	2,629,292	98.53	
Surfclam (round weight)	12,827	0.48	32.77
Sea scallop	11,612	0.44	29.67
Little skate	6,816	0.26	17.42
Monkfish	3,121	0.12	7.98
Mussel, unclassified	829	0.03	2.12
Winter skate	741	0.03	1.89
Spiny dogfish	656	0.02	1.68
Snail, unclassified	617	0.02	1.58
Striped sea robin	228	0.01	0.58
Summer flounder	189	0.01	0.48
Horseshoe crab	176	0.01	0.45
Cancer crab, unclassified	171	0.01	0.44
Rock crab	167	0.01	0.43
Jonah crab	163	0.01	0.42
Worm, unclassified	161	0.01	0.41
Skate, unclassified	131	0.005	0.34
Crab, unclassified	110	0.004	0.28
Whelk, true, unclassified	79	0.003	0.20
Northern stargazer	45	0.002	0.11
Sponge, unclassified	36	0.001	0.09
Barndoor skate	35	0.001	0.09
Clearnose skate	30	0.001	0.08
Northern sea robin	30	0.001	0.08
Sea star, unclassified	28	0.001	0.07
Smooth dogfish	22	0.001	0.06
American lobster	20	0.001	0.05
Black sea bass	20	0.001	0.05
Skate, little or winter	19	0.001	0.05
Fourspot flounder	12	0.0005	0.03
Windowpane flounder	8	0.0003	0.02
Moon snail	6	0.0002	0.02
Ocean pout	6	0.0002	0.01
Red hake	5	0.0002	0.01
American plaice	4	0.0001	0.01
Bluefish	3	0.0001	0.01
Whelk, unclassified	3	0.0001	0.01
Spotted hake	2	0.0001	0.01
Hermit crab, unclassified	2	0.0001	0.01
Silver hake	2	0.0001	0.004
Yellowtail flounder	1	0.00004	0.003
Winter flounder	1	0.00003	0.002
Scup	1	0.00003	0.002
Chain dogfish	1	0.00003	0.002
Sea raven	1	0.00002	0.001
Stony coral, unclassified	0.4	0.00001	0.001
Eel, unclassified	0.1	0.000004	0.0003
Sea cucumber, unclassified	0.1	0.000004	0.0003

Table 6. Total weights of species caught during all observed surfclam hauls in 2016, and their percentage of both total catch and un-targeted catch.

Surfclam fishery			
Number of observed trips	28		
Number of observed hauls	815		
Species caught	**Weight (lbs)**	**% of total catch**	**% of un-targeted catch**
Surfclam (round weight)	1,845,643	97.50	
Moon snail, unclassified	12,527	0.66	26.51
Ocean quahog (round weight)	12,267	0.65	25.96
Mussel, unclassified	12,007	0.63	25.41
Winter skate	2,737	0.14	5.79
Little skate	2,393	0.13	5.06
Horseshoe crab	1,307	0.07	2.77
Northern stargazer	1,131	0.06	2.39
Rock crab	651	0.03	1.38
Hermit crab, unclassified	618	0.03	1.31
Northern sea robin	351	0.02	0.74
Monkfish	323	0.02	0.68
Sea scallop	294	0.02	0.62
Spiny dogfish	168	0.01	0.36
Snail, unclassified	142	0.01	0.30
Elasmobranch eggs, unclassified	71	0.004	0.15
Summer flounder	60	0.003	0.13
Winter flounder	32	0.002	0.07
Jonah crab	27	0.001	0.06
Striped sea robin	27	0.001	0.06
American lobster	25	0.001	0.05
Channeled whelk	21	0.001	0.04
Windowpane flounder	12	0.001	0.03
Haddock	12	0.001	0.02
Longhorn sculpin	11	0.001	0.02
Sea raven	8	0.0004	0.02
Skate, little or winter	8	0.0004	0.02
Whelk, true, unclassified	5	0.0003	0.01
Ocean pout	4	0.0002	0.01
Lady crab	3	0.0002	0.01
Sea urchin, unclassified	2	0.0001	0.004
Worm, unclassified	2	0.0001	0.004
Anemone, unclassified	1	0.0001	0.003
Sea star, unclassified	1	0.0001	0.003
Stony coral, unclassified	1	0.00004	0.001
Sponge, unclassified	1	0.00003	0.001
Witch flounder	0.4	0.00002	0.001
Sand dollar	0.4	0.00002	0.001

Table 7. Estimated total fishery bycatch in pounds for 2016 by species.

	Ocean quahog fishery	Surfclam fishery
2016 landings (lbs meats)	21,036,293	39,428,066
Estimated total bycatch by species		
American lobster	1,340	2,844
American plaice	251	
Anemone, unclassified		146
Barndoor skate	2,291	
Black sea bass	1,333	
Bluefish	198	
Cancer crab, unclassified	18,550	
Channeled whelk		2,351
Clearnose skate	2,007	
Elasmobranch eggs, unclassified		7,994
Fourspot flounder	799	
Haddock		1,288
Hermit crab, unclassified	132	69,239
Horseshoe crab	11,638	146,371
Jonah crab	10,760	3,034
Lady crab		336
Little skate	449,930	267,919
Longhorn sculpin		1,209
Monkfish	206,046	36,176
Moon snail	422	1,402,531
Mussel, unclassified	54,751	1,344,344
Northern sea robin	1,947	39,344
Northern stargazer	2,971	126,576
Ocean pout	370	448
Ocean quahog (round weight)		1,373,410
Red hake	323	
Rock crab	11,011	72,911
Sea raven	33	896
Sea scallop	766,527	32,929
Sea star, unclassified	1,875	134
Sea urchin		235
Silver hake	106	
Skate unclassified	9,902	896
Smooth dogfish	1,459	
Snail, unclassified	40,743	15,899
Spiny dogfish	43,324	18,821
Sponge, unclassified	2,390	67
Spotted hake	158	
Striped sea robin	15,071	2,978
Summer flounder	12,457	6,673
Surfclam (round weight)	846,732	
Whelk unclassified	5,360	537
Windowpane flounder	508	1,366
Winter flounder	59	3,594
Winter skate	48,882	306,446
Worm, unclassified	10,621	190

Table 8. Observed bycatch by trip, in pounds, surfclam observed trips.

Trip	surfclams (round weight)	all OQ	all snails	all scallops	all teleosts	all elasmobranchs	all other inverts
1	112,615		73		16	193	1
2	69,173				498	164	587
3	108,103		2,973		6	2	13
4	41,987		479	35	5	16	226
5	70,072	614	81	85	94	349	34
6	72,063	5			2	39	60
7	85,307		1,687		9	286	11,945
8	112,862		1,699		363	1,226	7
9	43,973				169	3	29
10	33,276			2	239	6	216
11	8,236	7	5	113	8	1	4
12	21,839				12		14
13	20,323	819	47				3
14	53,223		115		24	69	111
15	36,368				29	22	10
16	38,925	1,213	14	2	34	9	99
17	134,701				9	211	1
18	40,048		1		134	85	97
19	15,781	1,785		31	8		6
20	43,503	2,195	9		5	98	147
21	53,223	4		26	99	68	44
22	141,126		1,634		24	51	27
23	169,700		790			15	
24	55,900		124		6	716	30
25	27,363				3	183	12
26	21,091		21			29	4
27	94,932				4	486	
28	119,930		1,953		2	74	4

Table 9. Observed bycatch by trip, in pounds, ocean quahog observed trips.

trip	ocean quahogs (round weight)	all SC	all snails	all scallops	all teleosts	all elasmos	all other inverts
1	158,148		4	2,081	147	425	25
2	338,278			509	180	456	
3	53,535			1,367	44	82	53
4	272,884			2,169	1,536	1,901	3
5	110,072			116	67	291	310
6	123,579			60	213	169	108
7	182,071	9,392		1,220	136	386	159
8	149,225			182	40	172	15
9	197,666			372	111	439	133
10	214,583			698	248	259	4
11	117,521		79	819	178	857	349
12	102,755		5	188	91	234	18
13	225,707			1,285	199	1,329	661
14	119,578			285	168	26	5
15	263,690	3,434		260	320	1,426	22

The most recent benchmark stock assessment for sea scallop was completed in July 2014 (NEFSC 2014). This assessment indicated that the sea scallop stock was not overfished, and overfishing was not occurring.

For the other non-target species, according to the 2016 NE Skate Stock Status Update, little skate and winter skate are not overfished and are not subject to overfishing (NEFSC 2017c).[31] Moon snails have not been assessed; therefore, their overfished and overfishing status is unknown.

6.2 Physical Environment and Essential Fish Habitat (EFH)

The physical, chemical, biological, and geological components of benthic and pelagic environments are important aspects of habitat for marine species and have implications for reproduction, growth, and survival of marine species. The following sections briefly describe key aspects of physical habitats which may be impacted by the alternatives considered in this document. This information is largely drawn from Stevenson et al. (2004), unless otherwise noted.

6.2.1 Physical Environment

Surfclams and ocean quahogs inhabit the northeast U.S. shelf ecosystem, which includes the area from the Gulf of Maine south to Cape Hatteras, extending seaward from the coast to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The northeast shelf ecosystem includes the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types.

Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents.

The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina.

The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom. The continental shelf in this region was shaped largely by sea level fluctuations caused by past ice ages. The shelf's basic morphology and sediments derive from the retreat of the last ice sheet and the subsequent rise in sea level. Currents and waves have since modified this basic structure.

[31] 2016 NE Skate Stock Status Update available at: https://s3.amazonaws.com/nefmc.org/4_NEFSC_SkateMemo_July_2017_170922_085135.pdf

Shelf and slope waters of the Mid-Atlantic Bight have a slow southwestward flow that is occasionally interrupted by warm core rings or meanders from the Gulf Stream. On average, shelf water moves parallel to bathymetry isobars at speeds of 5 - 10 cm/s at the surface and 2 cm/s or less at the bottom. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate of 20 cm/s that increases to 100 cm/s near inlets.

The shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope (100 - 200 m water depth) at the shelf break. Numerous canyons incise the slope, and some cut up onto the shelf itself. The primary morphological features of the shelf include shelf valleys and channels, shoal massifs, scarps, and sand ridges and swales. Most of these structures are relic except for some sand ridges and smaller sand-formed features. Shelf valleys and slope canyons were formed by rivers of glacier outwash that deposited sediments on the outer shelf edge as they entered the ocean. Most valleys cut about 10 m into the shelf; however, the Hudson Shelf Valley is about 35 m deep. The valleys were partially filled as the glacier melted and retreated across the shelf. The glacier also left behind a lengthy scarp near the shelf break from Chesapeake Bay north to the eastern end of Long Island. Shoal retreat massifs were produced by extensive deposition at a cape or estuary mouth. Massifs were also formed as estuaries retreated across the shelf.

Some sand ridges are more modern in origin than the shelf's glaciated morphology. Their formation is not well understood; however, they appear to develop from the sediments that erode from the shore face. They maintain their shape, so it is assumed that they are in equilibrium with modern current and storm regimes. They are usually grouped, with heights of about 10 m, lengths of 10 - 50 km and spacing of 2 km. Ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. The seaward face usually has the steepest slope. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Swales occur between sand ridges. Since ridges are higher than the adjacent swales, they are exposed to more energy from water currents and experience more sediment mobility than swales. Ridges tend to contain less fine sand, silt and clay while relatively sheltered swales contain more of the finer particles. Swales have greater benthic macrofaunal density, species richness and biomass, due in part to the increased abundance of detrital food and the less physically rigorous conditions.

Sand waves are usually found in patches of 5 - 10 with heights of about 2 m, lengths of 50 - 100 m and 1 - 2 km between patches. Sand waves are primarily found on the inner shelf, and often observed on sides of sand ridges. They may remain intact over several seasons. Megaripples occur on sand waves or separately on the inner or central shelf. During the winter storm season, they may cover as much as 15% of the inner shelf. They tend to form in large patches and usually have lengths of 3 - 5 m with heights of 0.5 - 1 m. Megaripples tend to survive for less than a season. They can form during a storm and reshape the upper 50 - 100 cm of the sediments within a few hours. Ripples are also found everywhere on the shelf and appear or disappear within hours or days, depending upon storms and currents. Ripples usually have lengths of about 1 - 150 cm and heights of a few centimeters.

Sediments are uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0 - 10 m covers most of the shelf. The mean bottom flow from the constant southwesterly current is not fast enough to move sand, so sediment transport must be episodic. Net sediment movement is in the same southwesterly direction as the current. The

sands are mostly medium to coarse grains, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf but is common in the Hudson Shelf Valley.

Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the "mud line," and sediments are 70 - 100% fine on the slope. On the slope, silty sand, silt, and clay predominate (Stevenson et al. 2004).

Greene et al. (2010) identified and described Ecological Marine Units (EMUs) in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative depth), and benthic organisms. According to this classification scheme, the sediment composition off New England and the Mid-Atlantic is about 68% sand, 26% gravel, and 6% silt/mud. The seafloor is classified as about 52% flat, 26% depression, 19% slope, and 3% steep (Table 10).

Artificial reefs are another significant Mid-Atlantic habitat. These localized areas of hard structure were formed by shipwrecks, lost cargoes, disposed solid materials, shoreline jetties and groins, submerged pipelines, cables, and other materials (Steimle and Zetlin 2000). While some of these materials were deposited specifically for use as fish habitat, most have an alternative primary purpose; however, they have all become an integral part of the coastal and shelf ecosystem. In general, reefs are important for attachment sites, shelter, and food for many species, and fish predators such as tunas may be attracted by prey aggregations or may be behaviorally attracted to the reef structure.

Like all the world's oceans, the western North Atlantic is experiencing changes to the physical environment as a result of global climate change. These changes include warming temperatures; sea level rise; ocean acidification; changes in stream flow, ocean circulation, and sediment deposition; and increased frequency, intensity, and duration of extreme climate events. These changes in physical habitat can impact the metabolic rate and other biological processes of marine species. As such, these changes have implications for the distribution and productivity of many marine species. Several studies demonstrate that the distribution and productivity of several species in the Mid-Atlantic have changed over time, likely because of changes in physical habitat conditions such as temperature (e.g., Weinberg 2005, Lucey and Nye 2010, Nye et al. 2011, Pinsky et al. 2013, Gaichas et al. 2015).

Table 10. Composition of EMUs off New England and the Mid-Atlantic (Greene et al. 2010). EMUs which account for less than 1% of the surface area of these regions are not shown.

Ecological Marine Unit	Percent Coverage
High Flat Sand	13%
Moderate Flat Sand	10%
High Flat Gravel	8%
Side Slope Sand	6%
Somewhat Deep Flat Sand	5%
Low Slope Sand	5%
Moderate Depression Sand	4%
Very Shallow Flat Sand	4%
Side Slope Silt/Mud	4%
Moderate Flat Gravel	4%

Deeper Depression Sand	4%
Shallow Depression Sand	3%
Very Shallow Depression Sand	3%
Deeper Depression Gravel	3%
Shallow Flat Sand	3%
Steep Sand	3%
Side Slope Gravel	3%
High Flat Silt/Mud	2%
Shallow Depression Gravel	2%
Low Slope Gravel	2%
Moderate Depression Gravel	2%
Somewhat Deep Depression Sand	2%
Deeper Flat Sand	1%
Shallow Flat Gravel	1%
Deep Depression Gravel	1%
Deepest Depression Sand	1%
Very Shallow Depression Gravel	1%

6.2.2 Essential Fish Habitat (EFH)

Information on surfclam and ocean quahog habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Atlantic Surfclam, *Spisula solidissima*, Life History and Habitat Characteristics." (Cargnelli et al. 1999a) and "Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Characteristics" (Cargnelli et al. 1999b). Electronic versions of these source documents are available at this website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current designations of EFH by life history stage for surfclam and ocean quahog are provided here:

Atlantic surfclam juveniles and adults: EFH habitat is defined as throughout the substrate, to a depth of three feet below the water/sediment interface, within federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90 percent of all the ranked ten-minute squares for the area where surfclams were caught in the NEFSC surfclam and ocean quahog dredge surveys. Surfclams generally occur from the beach zone to a [water] depth of about 200 feet, but beyond about 125 feet abundance is low.

Ocean quahog juveniles and adults: EFH habitat is defined as throughout the substrate, to a depth of three feet below the water/sediment interface, within federal waters from the eastern edge of Georges Bank and the Gulf of Maine throughout the Atlantic EEZ, in areas that encompass the top 90 percent of all the ranked ten-minute squares for the area where ocean quahogs were caught in the NEFSC surfclam and ocean quahog dredge surveys. Distribution in the western Atlantic ranges in [water] depths from 30 feet to about 800 feet. Ocean quahogs are rarely found where bottom water temperatures exceed 60 °F, and occur progressively further offshore between Cape Cod and Cape Hatteras.

There are other federally-managed species with life stages that occupy essential benthic habitats that may be susceptible to adverse impacts from hydraulic clam dredges; descriptions of these are given in Table 1 of Appendix C (from Stevenson et al. 2004) and are available at: http://www.greateratlantic.fisheries.noaa.gov/hcd/list.htm.

6.2.3 Fishery Impact Considerations

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2003). Atlantic surfclam and ocean quahog are primarily landed by hydraulic clam dredges. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the MSA). As stated in section 2.2 of Amendment 13, the prime habitat of surfclam and ocean quahog consists of sandy substrates with no vegetation or benthic 'structures' that could be damaged by the passing of a hydraulic dredge. In these 'high energy' environments, it is thought that the recovery time following passage of a clam dredge is relatively short. Because of the potential that the fisheries adversely impact EFH for a number of managed species, eight action alternatives (including closed area alternatives) for minimizing those impacts were considered by the Council in Amendment 13.

A panel of experts who participated in a 2001 workshop to evaluate the potential habitat impacts of fishing gears used in the Northeast region concluded that there are potentially large, localized impacts of hydraulic clam dredges on the biological and physical structure of sandy benthic habitats (NEFSC 2002). The Council concluded in Amendment 13 that there may be some adverse effects of clam dredging on EFH, but concurred with the workshop panel that the effects are short term and minimal because the fisheries occurs in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats. The panel concluded that biological communities would recover within months to years (depending on what species was affected) and physical structure within days in high energy environments to months in low energy environments. The preamble to the EFH Final Rule (January 17, 2002; 67 FR (Federal Register) 2343) defines temporary impacts as those that are limited in duration and that allow the particular environment to recover without measurable impact.

Additionally, at the time that workshop was held, the overall area impacted by the clam fisheries was relatively small (approximately 100 square nautical miles), compared to the large area of high energy sand on the continental shelf. The closed area alternatives that were considered in Amendment 13 were analyzed for their biological, economic, and social impacts, but given the results of the gear effects analysis in that document (summarized above), the Council concluded that none of them were necessary or practicable. Since 2003, when Amendment 13 was implemented, the area open to surfclam and ocean quahog harvesting has expanded to include a large area on Georges Bank that had previously been closed since 1990 due to the presence of the toxin that causes PSP in the tissues of surfclam and ocean quahog (NMFS 2012 and 2013). As such, a portion of the fishing effort now operates on Georges Bank and the gear is now being used on more complex, hard-bottom habitats (e.g., Nantucket Sholas) than was the case in 2003. The habitat impact analysis conducted by the NMFS concluded that the adverse impacts of renewed clam dredging on Georges Shoal would be minimal and/or temporary as long as dredging was confined to the shallower, more dynamic sandy bottom habitats which were the only areas where it was believed that the gear could be operated.

A portion of the following discussion is excerpted from the NEFMC's Omnibus EFH Amendment 2 (OHA2) which implemented measures designed to minimize to the extent practicable the adverse effects of fishing on essential fish habitat.[32] The OHA2 employed a spatial explicit model (SASI = Swept Area Seabed Impact) to estimate habitat vulnerability

[32] Available at: https://www.nefmc.org/library/omnibus-habitat-amendment-2

incorporating gear-specific susceptibility (S) and recovery (R) scores for a number of geological and biological habitat features in various subtracts.

Hydraulic clam dredges have been used in the surfclam fishery for over five decades and in the ocean quahog fishery since its inception in the early 1970s. These dredges are highly sophisticated and are designed to: 1) be extremely efficient (80 to 95% capture rate); 2) produce a very low bycatch of other species; and 3) retain very few undersized clams (NEFSC 2002).

The typical dredge is 12 feet wide and about 22 feet long and uses pressurized water jets to wash clams out of the seafloor. Towing speed at the start of the tow is 2.5 knots and declines as the dredge accumulates clams. The dredge is retrieved once the vessel speed drops below 1.5 knots, which can be only a few minutes in very dense beds. However, a typical tow lasts about 15 minutes. The water jets penetrate the sediment in front of the dredge to a depth of about 8 – 10 inches, depending on the type of sediment and the water pressure. The water pressure that is required to fluidize the sediment varies from 50 pounds per square inch (psi) in coarse sand to 110 psi in finer sediments. The objective is to use as little water as possible since too much pressure will blow sediment into the clams and reduce product quality. The "knife" (or "cutting bar") on the leading bottom edge of the dredge opening is 5.5 inches deep for surfclams and 3.5 inches for ocean quahogs. The knife "picks up" clams that have been separated from the sediment and guides them into the body of the dredge ("the cage"). If the knife size is not appropriate, clams can be cut and broken, resulting in significant mortality of clams left on the bottom. The downward pressure created by the runners on the dredge is about 1 psi (NEFSC 2002).

Hydraulic clam dredges can be operated in areas of large-grain sand, fine sand, sand with small-grain gravel, sand with small amounts of mud, and sand with very small amounts of clay. Most tows are made in large-grain sand. Surfclam/ocean quahog dredges are not fished in clay, mud, pebbles, rocks, coral, large gravel >0.5 in (> 1.25 cm), or seagrass beds. For the most part, hydraulic clam dredging is restricted to sandy and muddy sand substrates because the gear can be damaged in hard bottom areas.

In the SASI model, susceptibility and recovery were only evaluated for hydraulic clam dredges for sand and granule-pebble substrates because this gear cannot be operated in mud or in rocky habitats (NEFSC 2002, Wallace and Hoff 2005). In the absence of much published information on the degree to which benthic habitat features are susceptible to this gear, professional judgment relied on the presumption that these dredges have a more severe immediate impact on surface and sub-surface habitat features than other fishing gears used in the Northeast region.

Hydraulic dredges have higher vulnerability scores than otter trawls and scallop dredges, and much higher vulnerability scores than the fixed gears. Across all gears, geological and biological features are generally most susceptible to impacts from hydraulic dredges as compared to other gear types (average scores for all features in a particular substrate and energy environment ranged from 2.5-2.8 out of 3). Average otter trawl and scallop dredge S scores (susceptibility score) ranged from 1.0 to 2.0. Higher S scores reflect a higher proportion of features with >25% encountered estimated to have a reduction in functional habitat value. For trawls and scallop dredges, there was a larger proportion of high S scores (S=2 or 3) for geological features, especially in mud and cobble, than for biological features; for hydraulic dredges, however, there was very little difference between feature classes.

Geological feature recovery values are slightly higher (i.e., recovery times are longer) for hydraulic dredges than for the other two mobile gears (i.e., otter trawl and scallop dredges) fished in similar habitats (sand and granule-pebble). Average recovery values are more similar for biological features across the three mobile gear types, although in a few cases estimated recovery times are longer for hydraulic dredge gear. This was due to differences in gear effects associated with hydraulic dredges as compared to scallop dredges or otter trawls.

Based on the results of the SASI model, the OHA2 implemented mobile bottom-tending gear throughout various habitat management areas (HMAs) selected by the NEFMC (Figures 6 and 7). In addition, the OHA2 included an exemption for hydraulic clam dredges in many of the HMAs and included a provision for clam dredge exemption for Georges Bank-Nantucket Shoals for a year after implementation of OHA2 to allow time for the NEFMC to consider creating access areas within two of the areas included in the alternatives. The approved HMAs include: (a) establishing new HMAs in Eastern Maine and on Fippennies Ledge where mobile bottom-tending gear is prohibited, (b) maintaining the Cashes Ledge Groundfish Closure Area with current restrictions and exemptions, (c) modifying both the Cashes Ledge and Jeffreys Ledge Habitat Closure Areas, which are closed to mobile bottom-tending gear, (d) prohibiting all fishing gear except lobster pots in the Ammen Rock Area, (e) maintaining the Western Gulf of Maine (WGOM) Habitat Closure Area, which is closed to mobile bottom-tending gear, (f) aligning the boundaries of the WGOM Groundfish Closure Area to match the WGOM Habitat Closure Area, (g) exempting shrimp trawling from the northwest corner of the WGOM areas, and (g) identifying the existing Gulf of Maine Roller Gear restriction as a habitat protection measure.[33]

As indicated above, the surfclam and ocean quahog fisheries was granted a one year exemption (which expired on April 8, 2019) for the Great South Channel and Georges Shoal HMAs following implementation of OHA2. The NEFMC has identified areas within the Great South Channel and Georges Shoal HMAs that are currently fished and may be suitable for a hydraulic clam dredging exemption that balances achieving optimum yield for the surfclam and ocean quahog fisheries with the requirement to minimize adverse fishing effects on habitat to the extent practicable and is consistent with the underlying objectives of OHA2. The Clam Dredge Framework Action has been submitted to NMFS and is expected to be finalized in 2019.[34]

[33] For additional information see: https://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf

[34] For additional information see: https://www.nefmc.org/library/clam-dredge-framework

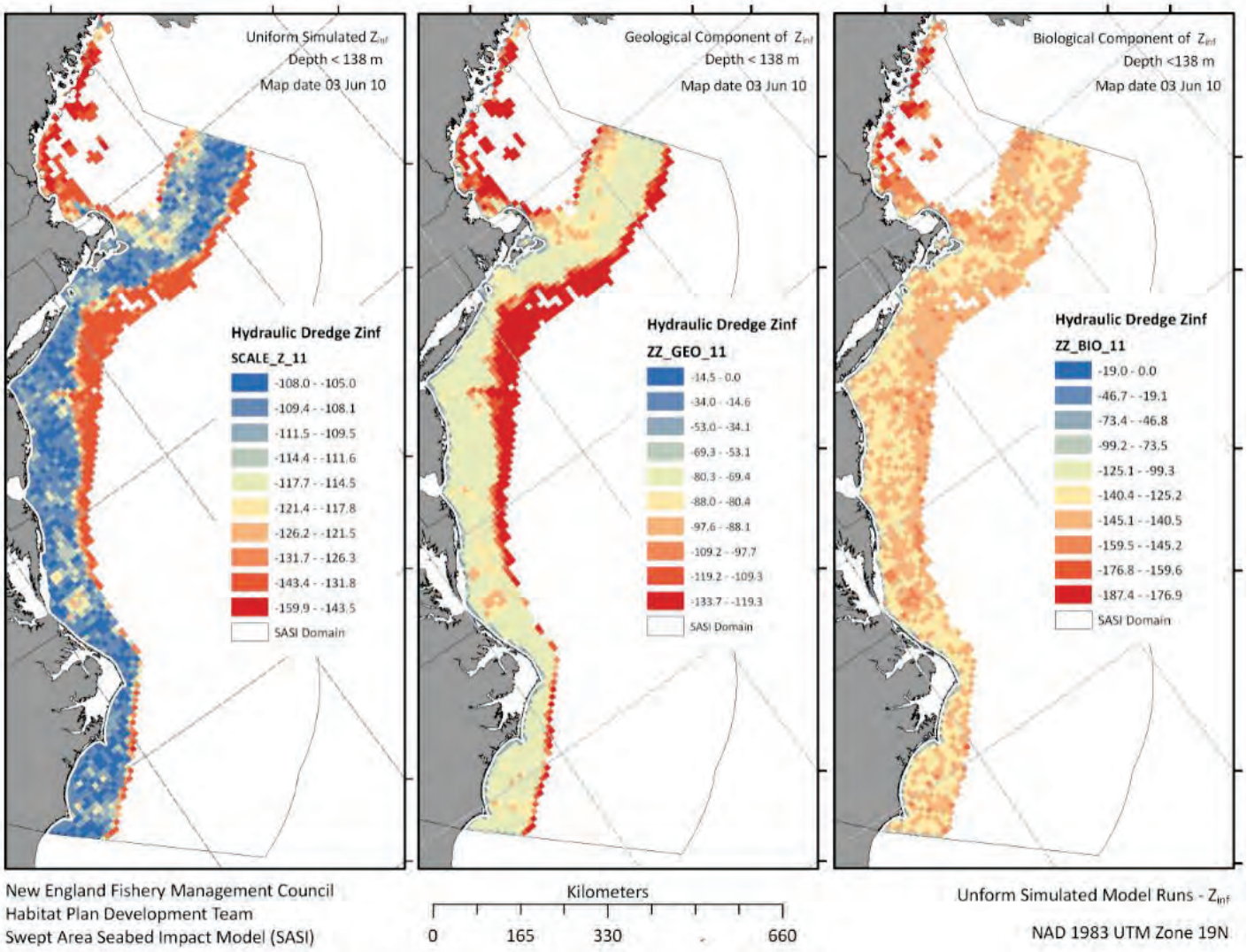


Figure 6. Simulation outputs (Z∞) for hydraulic dredge gear (left panel shows combined vulnerability of geological (mid-panel) and biological features (right-panel); blue=low vulnerability, red=high vulnerability).

Source: https://www.nefmc.org/library/omnibus-habitat-amendment-2

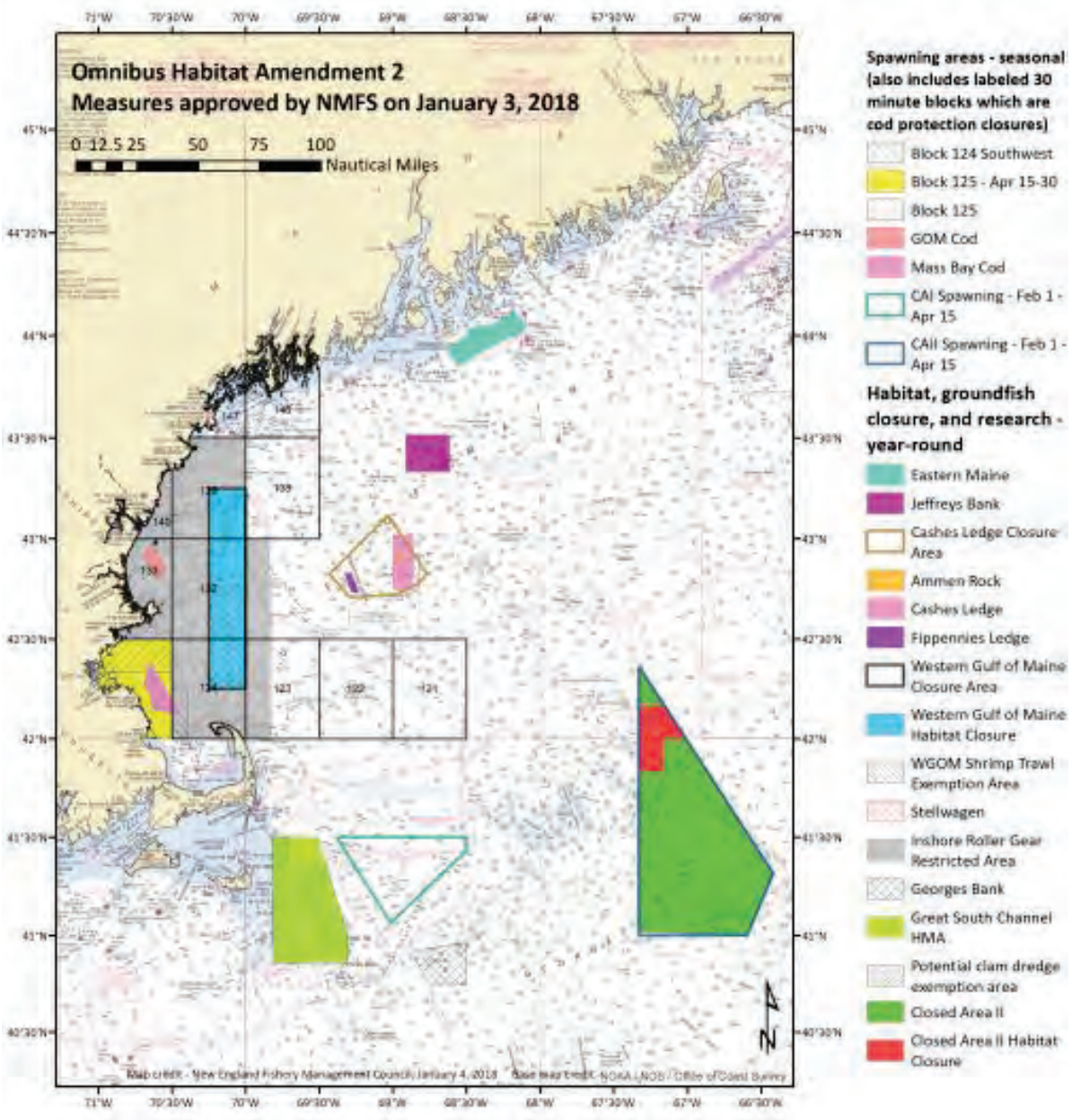


Figure 7. OHA2 approved regulations.
Source: https://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf

6.3 ESA and MMPA Protected Species

Numerous protected species inhabit the affected environment of the Atlantic Surfclam and Ocean Quahog FMP (Table 11; Hayes et al. 2017). These species are under NMFS jurisdiction and are afforded protection under the Endangered Species Act (ESA) of 1973 and/or the Marine Mammal Protection Act (MMPA) of 1972. More detailed description of the species listed in Table 11, including their environment, ecological relationships and life history information including recent stock status, are available at: http://www.greateratlantic.fisheries.noaa.gov/Protected/ and http://www.nmfs.noaa.gov/pr/sars/region.htm.

Cusk, alewife, and blueback herring are NMFS "candidate species" under the ESA. Candidate species are those petitioned species for which NMFS has determined that listing may be warranted under the ESA and those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. If a species is proposed for listing the conference provisions under Section 7 of the ESA apply (see 50 CFR §402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, these species will not be discussed further in this and the following sections; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed action. Additional information on cusk, alewife, and blueback herring can be found at: http://www.nmfs.noaa.gov/pr/species/esa/candidate.htm.

6.3.1 Species and Critical Habitat Not Likely to be Affected by the Proposed Action

The commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. Based on available information, it has been determined that this action is not likely to affect protected species (ESA-listed and/or MMPA protected; see Table 11). Further, this action is not likely to adversely affect any critical habitat for the species listed in Table 11. This determination was made because either the occurrence of the species is not known to overlap with the surfclam and ocean quahog commercial fisheries and/or there have never been documented interactions between the species and the primary gear type (i.e., clam dredge) used to prosecute the fisheries (Palmer 2017; NMFS NEFSC FSB 2015, 2016, 2017; see http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html and http://www.nmfs.noaa.gov/pr/sars/region.htm; https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries).

In the case of critical habitat, this determination has been made because the surfclam and ocean quahog fisheries will not affect the essential physical and biological features of North Atlantic right whale or loggerhead (Northwest Atlantic Distinct Population Segment, or DPS) critical habitat and, and therefore, will not result in the destruction or adverse modification of either species critical habitat (NMFS 2014; NMFS 2015a,b). See detailed discussion below.

As provided in Table 11 and Figure 8, North Atlantic right whale critical habitat also occurs in the affected environment of the surfclam/ocean quahog FMP. Critical habitat is habitat that contains physical and biological features essential to the conservation of the species. For right whales, it contains the features essential for successful foraging, calving, and calf survival (NMFS 2015a). Although comprised of two areas, only the area in the Gulf of Maine and Georges Bank region

(Unit 1) overlaps with the affected environment of the proposed action. Specifically, approximately half (372nm^2) of the Great South Channel (GSC) HMA overlaps with Unit 1 of critical habitat (21,334nm^2). This is 1.7% of the total right whale critical habitat. The action alternatives that propose alternative exemption areas for the fishery also have an overlap of less than 1.7%.

The boundaries of Unit 1 were defined by the distribution, aggregation and retention of *Calanus finmarchicus*, the primary and preferred prey of North Atlantic right whales, (NMFS 2015a,b). The essential physical features include prevailing currents, bathymetric features (such as basins, banks, and channels), oceanic fronts, density gradients, and flow velocities. The essential biological features include aggregations of copepods, preferably late stage *C. finmarchicus*, in the Gulf of Maine and Georges Bank region, as well as aggregations of diapausing (overwintering) populations in the deep basins of the region. NMFS (2015a,b) identified activities that may destroy or adversely modify these essential features; navigational dredging (termed "dredging") and commercial fisheries were amongst the activities analyzed and determined to not likely impact the identified foraging area physical or biological features.

"Dredging" as defined in NMFS's assessment (NMFS 2015a; 81 FR 4838, January 27, 2016) should not be confused with dredging using commercial fishing dredges, such as those used in the surfclam/ocean quahog FMP. In the assessment, dredging is in reference to the removal of material from the bottom of water bodies to deepen, widen or maintain navigation corridors, anchorages, or berthing areas, as well as sand mining (NMFS 2015a). Dredges typically used for navigational deepening or sand mining operations include hopper and cutterhead dredges. Although dredge size varies by location, hydraulic hopper dredges have draghead widths from a few feet to 12 feet; cutterhead diameters typically range from 16-20 inches (maximum 36 inches). These dredges disturb the sediment surface (down to 12 or more inches) creating turbidity plumes that last up to a few hours. In contrast, the surfclam/ocean quahog fishery uses hydraulic dredges to capture shellfish by injecting pressurized water into the sediment to a depth of 8-10 inches, creating a trench up to 30 cm deep and as wide as the dredge (approximately 12 feet) (Northeast Region Essential Fish Habitat Steering Committee 2002; see section 5.2.1 and Appendix B).

Navigational/sand mine dredging has not been found to limit the recovery of North Atlantic right whale (NMFS 2017a) or their critical habitat (NMFS 2015a). There is no evidence to suggest that this conclusion does not also hold true for dredging associated with commercial fishing operations. In terms of the surfclam/ocean quahog fishery, the scale and scope of hydraulic clam or mussel dredges is smaller than that associated with navigational/sand mining dredges. Turbidity created from such fishing dredges will be temporary in nature and will not impact the long-term viability of copepod aggregations. Fishing dredges, such as hydraulic clam, may also temporarily disturb localized copepod concentrations; however, these localized patches are continually replaced and/or shifting due to the dynamic oceanographic features of the Gulf of Maine (e.g., strong current, sharp frontal gradients, high mixing rates) that have a large effect on the distribution, abundance, and concentration of zooplankton populations in within the Gulf of Maine (NMFS 2015b). As provided above, one of the essential biological features of Unit 1 include aggregations of diapausing (overwintering) *C. finmarchicus* populations in the deep basins (i.e., Jordan, Wilkinson and Georges Basins) of the Gulf of Maine/Georges Bank Region. These basins provide refugia for diapausing populations of *C. finmarchicus* and serve as source populations for the annual

recruitment of copepods into the Gulf of Maine population (Davis 1987; Meise and O'Reiley 1996; Lynch et al. 1998; Johnson et al. 2006). In late winter, diapausing *C. finmarchicus* emerge from their dormant state and migrate to the surface layer where they are transported/advected to other areas within the Gulf of Maine by prevailing circulation patterns (Davis 1987; Baumgartner et al. 2007; Lynch et al. 1998; Johnson et al. 2006) . Depending on where copepods are transported, concentrated patches of copepods within the Gulf of Maine and GB region will be variable, both spatially and seasonally. Due to the dynamic physical oceanographic features of the Gulf of Maine and GB, copepods will continuously be advected from the deep ocean basins to areas throughout the Gulf of Maine and GB region. As hydraulic clam dredges do not operate in the deep basins of the Gulf of Maine /GB, these fishing gears will not affect or disrupt diapausing *C. finmarchicus* populations that are essential for populating the Gulf of Maine and George's Bank with right whales' preferred prey source. Based on this, although operation of the surfclam/ocean quahog FMP within regions of the Gulf of Maine or GB have the potential to cause temporary and localized disturbances of aggregations of copepods, it will not result in the permanent removal of the forage base necessary for right whale recovery. In addition, operation of hydraulic clam will not have any potential to affect the essential physical oceanographic features (i.e., currents, temperature, bathymetry) of Unit 1.

Given that (1) the impacts are temporary and localized, (2) the overlap of critical habitat and the alternatives is less than 1.7%, and (3) the activity is limited in scale and scope, the operation of the surfclam/ocean quahog fisheries will not affect the essential physical and biological features of North Atlantic right whale critical habitat and, therefore, will not result in the destruction or adverse modification of this species critical habitat (NMFS 2015a,b). The GSC HMA and proposed exemptions areas in the Great South Channel do not meet the adverse modification threshold and are not expected to impact right whale recovery.

Table 11. Species Protected Under the ESA and/or MMPA that may occur in the affected environment of the Atlantic surfclam and ocean quahog fisheries. Marine mammal species (cetaceans and pinnipeds) italicized and in bold are considered MMPA strategic stocks.

Species	Status	Potentially affected by this action?
Cetaceans		
North Atlantic right whale (Eubalaena glacialis)	*Endangered*	No
Humpback whale, West Indies DPS (Megaptera novaeangliae)	Protected (MMPA)	No
Fin whale (Balaenoptera physalus)	*Endangered*	No
Sei whale (Balaenoptera borealis)	*Endangered*	No
Blue whale (Balaenoptera musculus)	*Endangered*	No
Sperm whale (Physeter macrocephalus	*Endangered*	No
Minke whale (*Balaenoptera acutorostrata*)	Protected (MMPA)	No
Pilot whale (Globicephala spp.)[1]	*Protected (MMPA)*	No
Risso's dolphin (*Grampus griseus*)	Protected (MMPA)	No
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected (MMPA)	No
Short Beaked Common dolphin (*Delphinus delphis*)[2]	Protected (MMPA)	No
Bottlenose dolphin (Tursiops truncatus)[3]	*Protected (MMPA)*	No
Harbor porpoise (*Phocoena phocoena*)	Protected (MMPA)	No
Sea Turtles		
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered	No
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered	No
Green sea turtle, North Atlantic DPS (*Chelonia mydas*)	Threatened	No
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic Ocean DPS	Threatened	No
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered	No
Fish		
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	No
Atlantic salmon (*Salmo salar*)	Endangered	No
Atlantic sturgeon *(Acipenser oxyrinchus)*		
Gulf of Maine DPS	Threatened	No
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered	No
Cusk (*Brosme brosme)*	Candidate	No
Pinnipeds		
Harbor seal (*Phoca vitulina*)	Protected (MMPA)	No
Gray seal (*Halichoerus grypus*)	Protected (MMPA)	No
Harp seal (*Phoca groenlandicus*)	Protected (MMPA)	No
Hooded seal (*Cystophora cristata*)	Protected (MMPA)	No
Critical Habitat		
North Atlantic Right Whale	ESA (Protected)	No

[1] Due to the difficulties in discriminating short finned (*G. melas melas*) and long finned (*G. macrorhynchus*) pilot whales at sea, they are often just referred to as *Globicephala spp*.
[2] Called "common dolphin" before 2008.
[3] Includes the Western N. Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks.

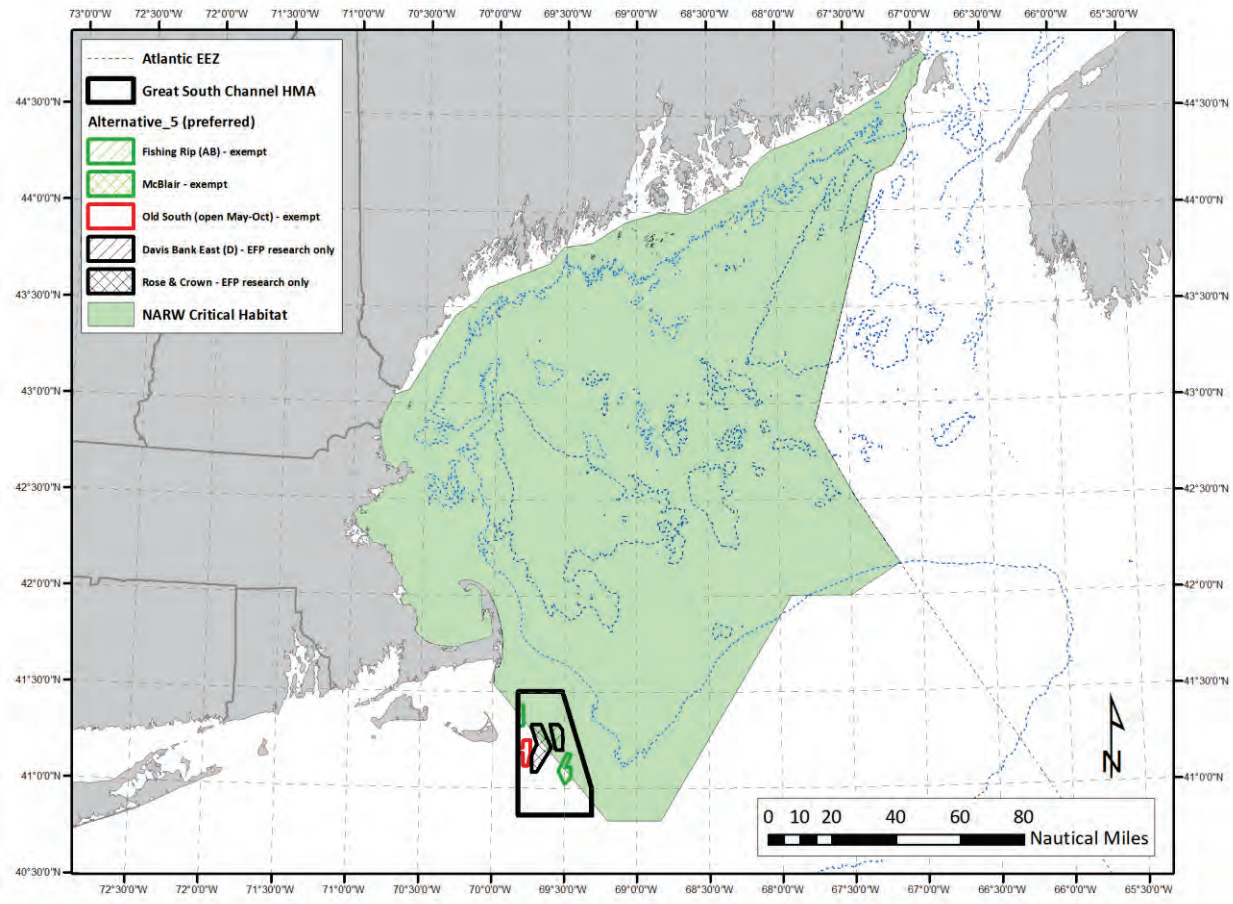


Figure 8. North Atlantic Right Whale Critical Habitat in the Gulf of Maine, GSC HMA, and proposed action exemption areas and research areas. Additional areas of critical habitat are designated along the coasts of South Carolina, Georgia, and Florida, but are not shown here.

6.4 Human Communities and Economic Environment

When Amendment 13 to the FMP was developed, the Council hired Dr. Bonnie McCay and her associates at Rutgers University to describe the ports and communities that are associated with the surfclam and ocean quahog fisheries. The researchers did an extensive job characterizing the three main fisheries (non-Maine ocean quahog, Maine ocean quahog, and surfclam). The McCay team characterizations of the ports and communities are based on government census and labor statistics and on observations and interviews carried out during the late 1990s and in the fall of 2001. The description of the fishing gear, areas fished, etc. are fully described in Amendment 13. Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs (MAFMC 2003). Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine (MAFMC 2018a and 2018b). The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market (MAFMC 2018b). The other

fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products (MAFMC 2018a and 2018b).

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: https://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php. In addition, Fishery Performance Reports prepared by industry advisors, provide additonal information on the social and economic environments from the industry members perspectives and are available at: http://www.mafmc.org. Recent trends in the fisheries are presented below and in Fishery Information Documents also available on the Council website.

6.4.1 Fishery Descriptions

6.4.1.1 Atlantic Surfclam

The total number of vessels participating in the surfclam fishery has remained relatively stable in the recent decade (Table 12). In 2017, about 2.2 million bushels of surfclams were landed, slighlty lower than 2016 at 2.3 million bushels. The average ex-vessel price of surflcams reported by processors was $13.90 in 2017, slightly higher than the $13.25 per bushel seen in 2016. The total ex-vessel value of the 2017 federal harvest was approximately $31 million, the same as 2016. Industry has described several factors that have affected their industry. Trips harvesting surfclams have increased in length as catch rates have declined (MAFMC 2009, 2010, 2013).

As indicated above, surfclams on Georges Bank were not fished from 1990 to 2008 due to the risk of PSP. There was light fishing on Georges Bank in years 2009-2011 under an exempted fishing permit and landings per unit of effort (LPUE) in that area was substantially higher (5-7 times higher) than in other traditional fishing grounds. NMFS reopened a portion of Georges Bank to the harvest of surfclam and ocean quahog beginning January 1, 2013 (77 FR 75057, December 19, 2012) under its authority in 50 CFR §648.76. Subsequently, NMFS reopened an additional portion of Georges Bank beginning August 16, 2013 (78 FR 49967). Harvesting vessels have to adhere to the recently adopted testing protocol developed by the National Shellfish Sanitation Program.

6.4.1.2 Ocean Quahogs

The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend. Trips harvesting quahogs have also increased in length as catch rates have declined steadily. (MAFMC 2009, 2010, 2013). The 30 or so vessels that reported landings during 2004 and 2005 has consolidated over time into fewer vessels.

The Maine ocean quahog fleet numbers started to decline when fuel prices soared in mid-2008, and a decline in the availability of smaller clams consistent with the market demand (i.e., half-shell market), and totaled 8 vessels in 2017 (Table 12).

The average ex-vessel price of non-Maine ocean quahogs reported by processors in 2017 was $7.18 per bushel, one cent higher than the 2016 price ($7.17 per bushel). In 2017, about 3.2 million bushels of non-Maine ocean quahog were landed, slightly higher than 2016 at 3.0 million bushels.

The total ex-vessel value of the 2017 federal harvest outside of Maine was approximately $23 million, slightly higher than the $22 million in 2016.

In 2017, the Maine ocean quahog fleet harvested a total of 34,550 Maine bushels, a 72% decrease from the 124,839 bushels harvested in 2006, and a 7% decrease from the prior year (2016; 37,051 bushels). Average prices for Maine ocean quahogs have declined substantially over the past 15 years. In 2003, there were very few trips that sold for less than $37.00 per Maine bushel, and the mean price was $40.66. Prices have since been lower; industry has indicated it was the result of aggressive price cutting. In 2017, the mean price was $31.15 per Maine bushel. The value of the 2017 harvest reported by the purchasing dealers totaled $1.1 million, a decrease of 78% when compared to 2003.

6.4.2 Description of the Areas Fished

A detailed description of the areas fished by the fisheries for surfclam and ocean quahogs was presented in the document titled "Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council" (Northern Economics, Inc. 2019).

The commercial fishery for surfclam in Federal waters is prosecuted with large vessels and hydraulic dredges. The distribution of the fishery as catch and LPUE is shown in Figures 9 and 10. The commercial fishery for ocean quahogs in Federal waters is prosecuted with large vessels and hydraulic dredges, and is very different from the small Maine fishery prosecuted with small vessels (35-45 ft).

6.4.3 Port and Community Description

Communities from Maine to Virginia are involved in the harvesting and processing of surfclams and ocean quahogs. Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine. The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products.

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: http://www.nefsc.noaa.gov/read/socialsci/communityProfiles.html and in Northern Economics, Inc. (2019).

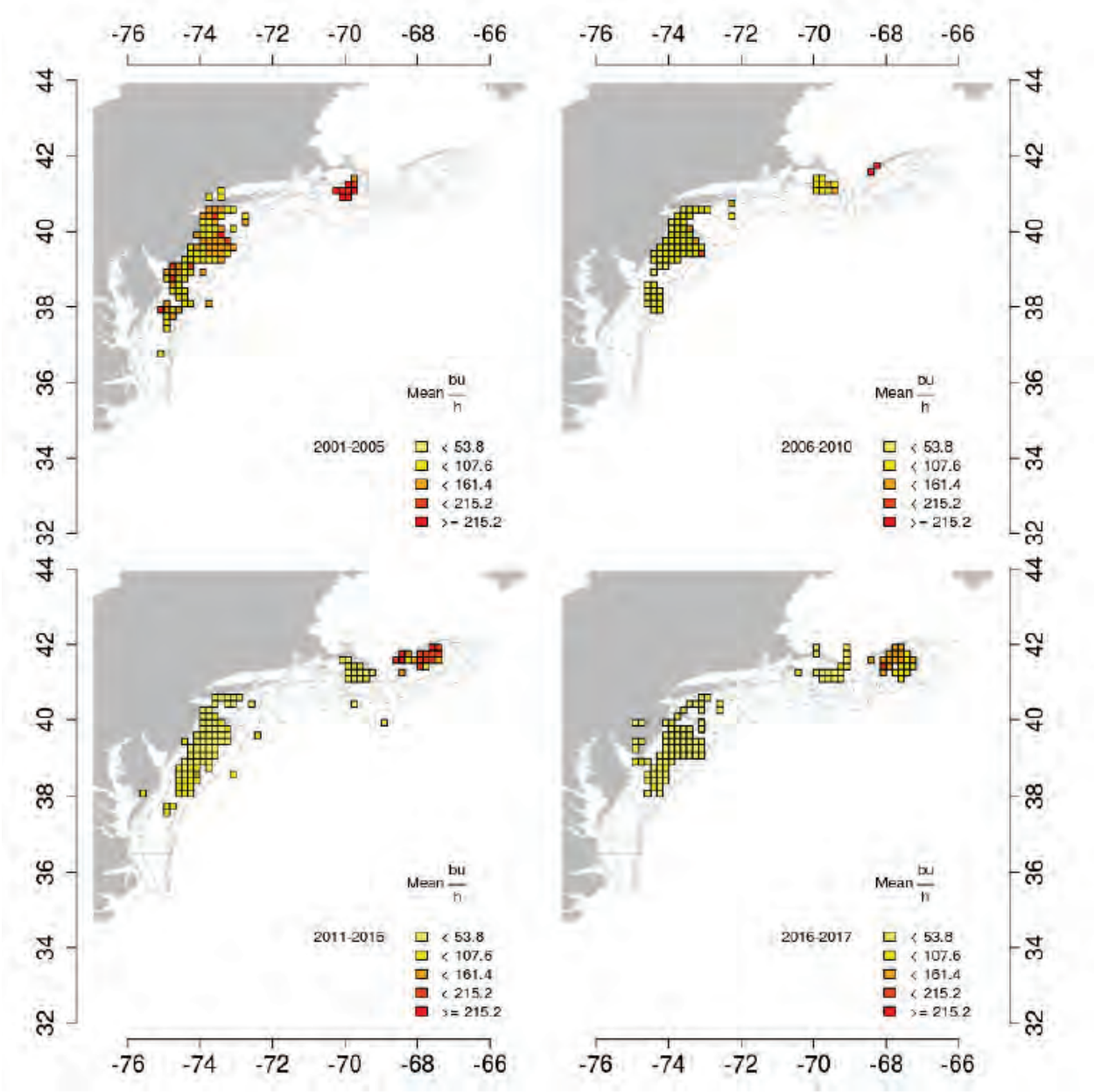


Figure 9. Average surfclam landings per unit effort (LPUE; bu h-1) by ten-minute squares over time, 2001-2016 and preliminary 2017. Only squares where more the 5 kilo bushels were caught are shown. Source: Dan Hennen Personal Communication, March 22, 2018.

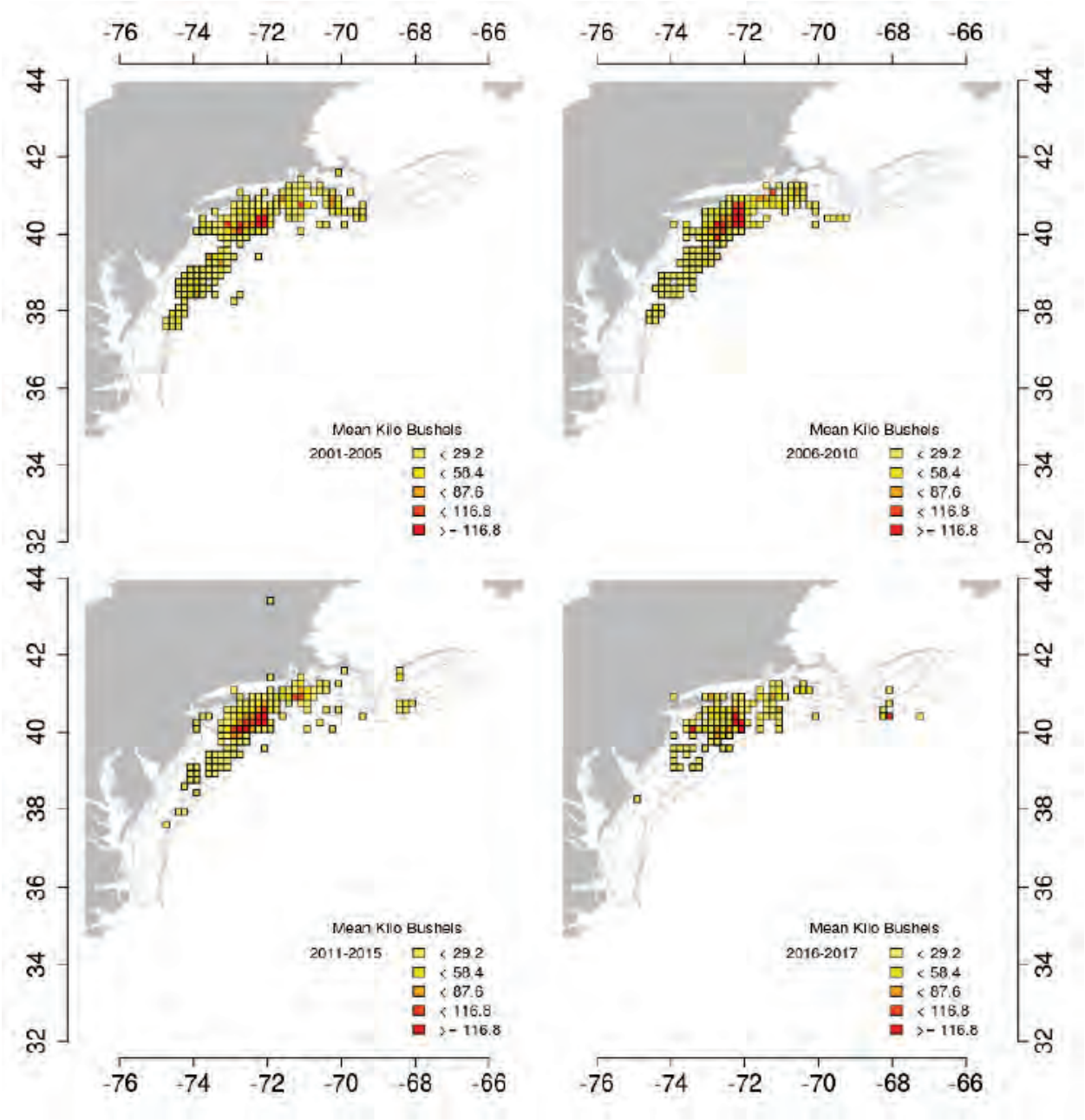


Figure 10. Average ocean quahog landings by ten-minute squares over time, 2001-2016, and preliminary 2017. Only squares where more the 5 kilo bushels were caught are shown.
Source: Dan Hennen Personal Communication, March 22, 2018.

6.4.4 Vessels and Dealers

Vessels

The total number of vessels participating in the surfclam fishery has been relatively stable from 2004 through 2017, ranging from 29 vessels in 2006 to 40 vessels in 2017 (Table 12). [35] The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend. Trips harvesting quahogs have also increased in length as catch rates have declined steadily (MAFMC 2009, 2010, 2013). The 30 or so vessels that reported ocean quahog landings during 2004 and 2005 was reduced and coast-wide harvests consolidated on to approximately 20 vessels in the subsequent years. The Maine ocean quahog fleet numbers started to decline with fuel prices soaring in mid-2008 and totaled 8 in 2017 (Table 12).

Initially, 154 vessel received ITQ allocation in 1990; however, in the last decade there have been fewer than 50 vessels participating in the fisheries each year. While it is not possible to accurately project future vessel consolidation patterns, it is possible that under additional vertical integration the number of vessels participating in the fisheries could decerase further. Vertically integrated companies could choose to retire older less efficient vessels (for larger, newer, more efficient ones). In addition, there could be further departure of the few independent harvesters still participating in the fisheries. In 2016 and 2017, a handful of independent vessels (less than 5) reported landings of surcalms and ocean quahogs.

Table 12. Surfclam and ocean quahog active vessels composition, 2004-2017.

Vessel-type	Harvested Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Non-Maine Vessels	Both surfclam & quahog	14	12	9	9	8	8	12	12	13	7	7	6	8	14
	Only surfclam	21	24	20	24	24	28	22	24	29	33	31	31	30	26
	Only quahog	15	12	9	8	10	7	9	7	6	9	9	10	9	8
	Total	50	48	38	41	42	43	43	43	48	49	47	47	47	48
Maine Vessels	Only quahog	34	32	25	24	22	19	15	13	12	11	9	8	8	8

Dealers

In 2017, there were 9 companies (i.e., dealers) reporting purchases of surfclam and/or ocean quahog from the industrial fisheries outside of Maine. These 9 companies operated 15 different facilities located in multiple states. They were distributed by state as indicated in Table 13. Employment data for these specific firms are not available. In 2017, these companies bought approximately $23 million worth of ocean quahog and $31 million worth of surfclam.

[35] The reported number of vessels participating in the surfclam and/or ocean quahog fisheries in this document are derived from clam logbook data unless otherwise noted.

Table 13. Number of facilities that reported buying ocean quahog and surfclam by state (from NMFS dealer/processor report database) in 2017.

	MA	NJ	Other
Number of Facilities	8	3	4

6.4.5 ITQ Program and Market Description

Initial ITQ Allocations

The FMP to manage these fisheries was initiated in 1977. The FMP and subsequent Amendments (i.e., Amendments 1 through 7) can be credited with rebuilding the surfclam stock and contributing to some economic stability in the industry. However, by the mid-1980s, rapid growth in harvesting capacity in the surfclam fishery and associated inefficiencies (e.g., vessels could only fish 36 hours per quarter) led to the development of the ITQ system (MAFMC 1988).

The initial allocations of ITQ quota share were made to owners of all permitted vessels that harvested surfclams and/or ocean quahogs in the Atlantic EEZ from 1979 through 1988. In general terms, the formula for allocating surfclams in the Mid-Atlantic Area was based on average historical catch (80% of the allocation) plus a "cost factor" (20% of the allocation) based on the vessel's capacity (length x width x depth; a proxy for the owner's capital investment). For ocean quahogs, the allocation was simply based on the average historical catch. This meant that the initial ITQ shares were allocated to owners of surfclam and ocean quahog vessels (MAFMC 1988).

However, there were very limited restrictions on transfer of quota shares or ownership in the ITQ system (MAFMC 1988). The ITQ program allows allocation owners to permanently transfer the ITQ quota share (i.e., sale, permanent transfer) or lease ITQ out (i.e., cage tag leasing, temporary annual transfer). Since ITQs are transferable, this allows for shifts in production to participants that may be more efficient.

In the years before the surfclam and ocean quahog ITQ system was implemented, there was a build-up in the number of vessels participating in these fisheries, as vessel owners sought to build-up catch histories in order to obtain more ITQ quota share upon program implementation.[36] When the ITQ system was implemented, there were 125 vessels participating in the surfclam and ocean quahog fisheries (Färe et al. 2015).

Trends in Consolidation

The original ITQ allocations went to owners of vessels that qualified for the program. The ITQ program provided a great deal of flexibility and some of the individuals that received initial allocations of ITQ quota share sold out, while others acquired additional shares.

[36] It is also possible that the increase in vessels in an owner's fleet may have been in response to management measures limiting fishing time per vessel.

The ITQ program contained very few restraints on ownership or transfers, and as such, the program was extremely effective in rapidly eliminating economically excessive capacity (National Research Council 1999). Harvesters could consolidate their catch onto fewer vessels that could then operate at or near full capacity. A number of vessel owners, including vertically integrated processors, had assembled large fleets during the 1980s, and thus many owners were in a position to take one or more of their vessels out of the surfclam fishery to economize (McCay and Brandt 2001). Furthermore, some vessel owners took advantage of the surfclam and ocean quahog ITQ program to divest themselves of the older vessels they had accumulated during the moratorium, while other owners chose to lease their ITQ quota share to others or to leave the surfclam fishery entirely (McCay and Brandt 2001). The major decrease in the number of vessels participating in the clam fisheries occurred, as expected, at the onset of the program. There has been a large degree of further consolidation in the last 30 years.

For the 3 years (1987-1989) prior to the implementation of the ITQ system, there were on average, 137 and 67 active vessels fishing for quota in the surfclam and ocean quahog fisheries, respectively. On average, for the 5 years after the ITQ program implementation (1990-1995), the number of active vessels participating in the surfclam fisheries decreased to 73 vessels and the number of active vessels participating in the ocean quahog fisheries increased to 76 vessels (Brinson and Thunberg 2013, 2016). Further reductions in the number of active vessels participating in these fisheries occurred through time. In 2017, there were 48 vessels participating in these fisheries combined (Table 12). One of the goals of the ITQ system in these fisheries was to reduce fleet capacity; this goal was met, as more efficient operations purchased the quota share of less efficient operations, removing redundant capital from the fisheries.

Upon the program implementation in 1990, there were 154 entities (i.e., unique surfclam allocation holders/vessel owners) that received an initial Atlantic surfclam quota share. The number of entities receiving quota share decreased to 116 after the first year of implementation. The number of entities holding surfclam quota share remained relatively stable for the 1991 to 2000, ranging from 107 to 117 (Brinson and Thunberg 2013). Since 2005 the number of entities holding surfclam quota share declined from 81 (Brinson and Thunberg 2013) to 67 in 2017 (2017 Atlantic surfclam ITQ Allocation Holder Report).[37]

There were 117 entities (i.e., unique ocean quahog allocation holders) that received an initial ocean quahog quota share in 1990. The number of entities receiving quota share decreased to 82 after the first year of implementation. There was a slight steady reduction from year to year in the number of entities holding quota share from 1992 (82 entities) to 2003 (62 entities; Brinson and Thunberg 2013). However, since 2004 the number of entities holding surfclam quota share declined from 56 (Brinson and Thunberg 2013) to 37 in 2017 (2017 Atlantic surfclam ITQ Allocation Holder Report).[37]

There have been other reasons for consolidation. The cost of fuel prices and the distance needed to travel to harvest clams, which cascades through the vessel, processors, ports, etc., and has put greater emphasis on economy on scale and location, leading to additional consolidation (Surfclam and Ocean Quahog Advisory Panel 2016). Other factors that have caused stress in the industry have also resulted in additional consolidation. For example, in 2005 a series of conditions resulted

[37] Available at: https://www.greateratlantic.fisheries.noaa.gov/sustainable/species/clam/

in a substantial portion of the industrial fleet leaving the clam fishery and greatly reduced operations at the second-largest processor in the clam industry. Eastern Shore Seafood Products of Mappsville, Virginia was a vertically-integrated company operating both vessels and a processing plant (Northern Economics, Inc. 2019). In 2005, a deal was struck in which ownership of the plant and vessels were given over to an entity including the Truex, Meyers, Truex Group, and the Sea Watch management team. In May of 2008 the Mappsville plant ceased operations altogether and moved the processing work to other Sea Watch plants in Easton, Maryland and Milford, Delaware (Vaughn 2008).

A myriad of factors has contributed to the difficulties in the clam industry. Major users of clam meats have reduced their purchases from industry and stopped advertising products like clam chowder in the media. Industry members reported that imported meat from Canada and Vietnam contributed to an oversupply of clam meats in the marketplace. Trips harvesting surfclams have increased in length as catch rates have declined. All of these factors and more have resulted in clam-related businesses becoming less profitable in recent years. Consolidation and concentration in the industry has grown as the businesses in the strongest financial condition assimilate those in the weakest position (MAFMC 2009, 2010).

Processors were not directly incorporated into the initial allocation of quota; however, processors owning permitted vessels received the allocations associated with those vessels. Some processors or processors affiliates have developed quota ownership through either the acquisition of vessels and accompanying quota or the acquisition of quota directly (Mitchell et al. 2011).

Historically, vertically-integrated firms have been involved in the surfclam and ocean quahog fisheries. Some of these were subsidiaries of multinational food corporations with fleets of a dozen or so boats; others a family business with large fleets; and yet others were small rural processing operations with one or two boats of their own. The ability of processors to rely on their own vessels to supply raw product for their plants gave them bargaining power vis à vis the "independents" (McCay and Brandt 2001). With implementation of the ITQ program, an industry already marked by the dominance of a few large vertically integrated firms became even more so, as small-holders either sold out or chose to lease out their allocations rather than continue to fish (McCay et al. 2011).

In order for processors to meet delivery schedules set by their customers (many of which are large consumer goods companies, such as Progresso or Campbell Soup Company, or large food service companies, such as Sysco) results in that virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates. Processors need to be able to direct vessels to harvest at certain times, weather permitting. Given these scheduling requirements, it is not generally possible for a vessel to harvest for more than one processor and still meet the scheduling needs of the processors. Vessels must have quota at the time they harvest clams. Therefore, processors or fishers must arrange for the quota that the vessels require prior to leaving port. As a result of the need to harvest on a schedule, virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates (Mitchell et al. 2011).

Under the ITQ program, the ownership of ITQ quota share has replaced the ownership of surfclam vessels as a way to secure the supply of surfclams as raw materials. Prior to the ITQ program, only

surfclam vessels with moratorium permits were allowed to harvest surfclams in the Mid-Atlantic Area, the predominant surfclam area. As a result, clam processors owned and operated surfclam vessels to secure the supply of surfclams. However, any U.S. registered vessels are allowed to harvest surfclams under the Atlantic surfclam and ocean quahog ITQ program as long as they hold surfclam ITQ quota share. Therefore, the ownership of ITQ quota share becomes the key element. In fact, some of the integrated processors have abandoned their vessel operations and focused on securing the ownership of ITQ quota share (Wang 1995).

The HHI is a commonly accepted measure of market concentration (an indicator of the amount of competition in the marketplace). The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. According to the U.S. DOJ & Federal Trade Commission (FTC), Horizontal Merger Guidelines § 5.3 (2010), transactions that increase the HHI by more than 200 points in highly concentrated markets are presumed likely to enhance market power. [38]

NMFS data also show that the concentration of harvesting has risen substantially in the last decade, largely as the result of the backward integration of clam processors into harvesting (Mitchell et al. 2011). The processing sector itself has also changed. In 1979, there were 44 plants that processed either surfclams or ocean quahogs. The HHI of purchases by processors grew between 2003 and 2008 from 2,068 to 3,134 for surfclams and from 3,431 to 4,369 for ocean quahogs (Mitchell et al. 2011). Concentration has fallen somewhat after peaking in the surfclam and ocean quahog fisheries at 3,675 and 4,629, respectively, in 2007. The HHI of processor purchases for surfclams and ocean quahogs combined has also grown, from 2,226 in 2003 to 3,479 in 2008. In 2017, there were nine firms operating 15 plants in multiple states (section 6.4.4).

In addition, NMFS has also conducted an analysis of quota usage by examining records showing the harvest amounts for vessels in the surfclam and ocean quahog fisheries and tracing their ownership. This analysis indicated that the HHI of harvesting activity for surfclams in 2008 was 4,080 and the HHI of harvesting activity for ocean quahogs was 2,653. The HHI of harvesting activity for surfclam and ocean quahog combined was 2,890. Lastly, the HHI of ownership (quota ownership) of surfclam quota in 2009 was 1,167, and the HHI of ownership of ocean quahog quota was 993 (Mitchell et al. 2011).

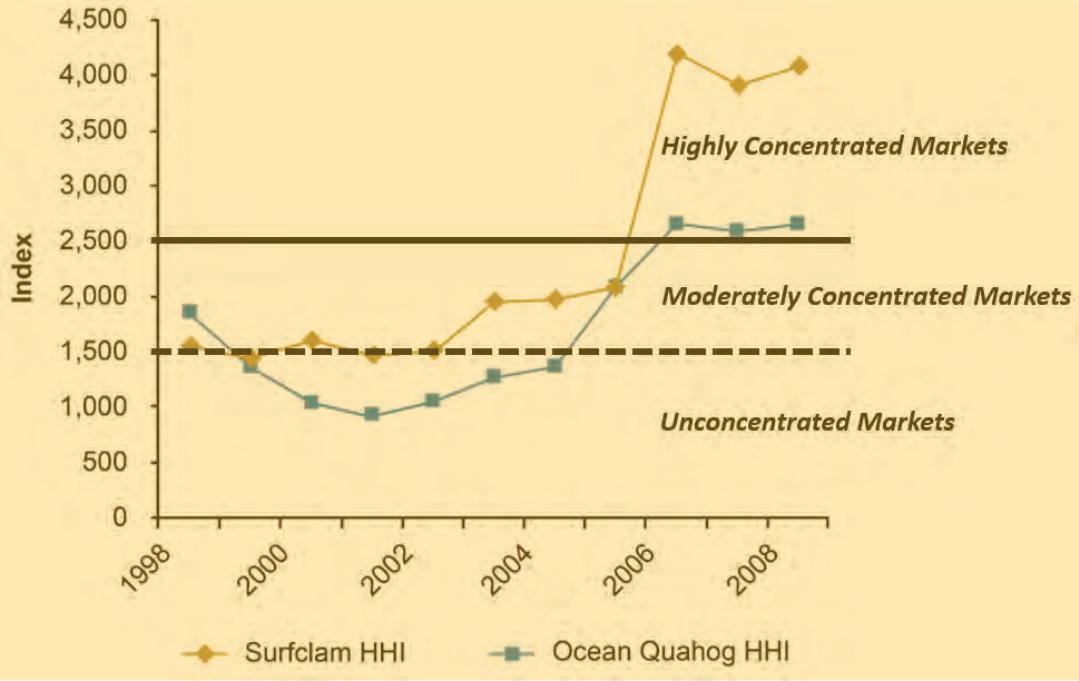
The HHI of harvesting (2006-2008) and processing (2005-2008) in the surfclam and ocean quahog fisheries estimated by NMFS (NMFS 2009) would be considered highly concentrated by the DOJ. Updated HHI values for the harvesting and processing sectors (John Walden, Pers. Comm., NEFSC 2019) are presented in Figures 11 and 12. These figures indicate that the harvesting and

[38] The HHI is equal to the sum of the squared market shares of the participants in the market. Thus, if there are three firms with shares of 50%, 30%, and 20%, the HHI is equal to 3,800 ($3,800 = 50^2 + 30^2 + 20^2 = 2500 + 900 + 400 = 3800$). The HHI value approaches zero when a specific market comprises a large number of similar firms, and reaches 10,000 when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. Markets in which the HHI is between 1,500 and 2,500 points are typically considered to be moderately concentrated and markets in which the HHI is in excess of 2,500 points are considered to be highly concentrated. https://www.justice.gov/atr/herfindahl-hirschman-index

processing sectors for the surfclam and ocean quahog fisheries continue to be highly concentrated (2016-2018). The processing sector HHI values for 2016-2018 were calculated using the same methods as were used through 2008. However, the harvesting sector HHI values for 2016-2018 were calculated by using an algorithm to assign vessels to ownership groups based on permit data and other publicly available data sources (John Walden, Pers. Comm., NEFSC 2019). However, in order to identify ownership for the 2016-2018 period, vessel ownership data was used in conjunction with permit database to identify all the individuals who own one or more vessels by firm. This was the result of an improved database that provided the information in one place. In addition, online resources provided additional company and vessel information to identify vessel ownership.

The HHI values of ownership (quota ownership) for surfclam quota and ocean quahog quota were not updated. As previously stated, the Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power (monopoly/oligopoly) is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries. While it is possible that current HHI values of quota ownership (for both surfclam quota and ocean quahog quota) are likely to be slightly higher than those reported in 2009 (see penultimate paragraph above), those values are likely to not be of concern. This is based on the maximum quota ownership values reported in Tables 2 and 3, and the considerably large 2017 number of ITQ ownership holders in both fisheries as described above.

A) 1999-2008



B) 2016-2018

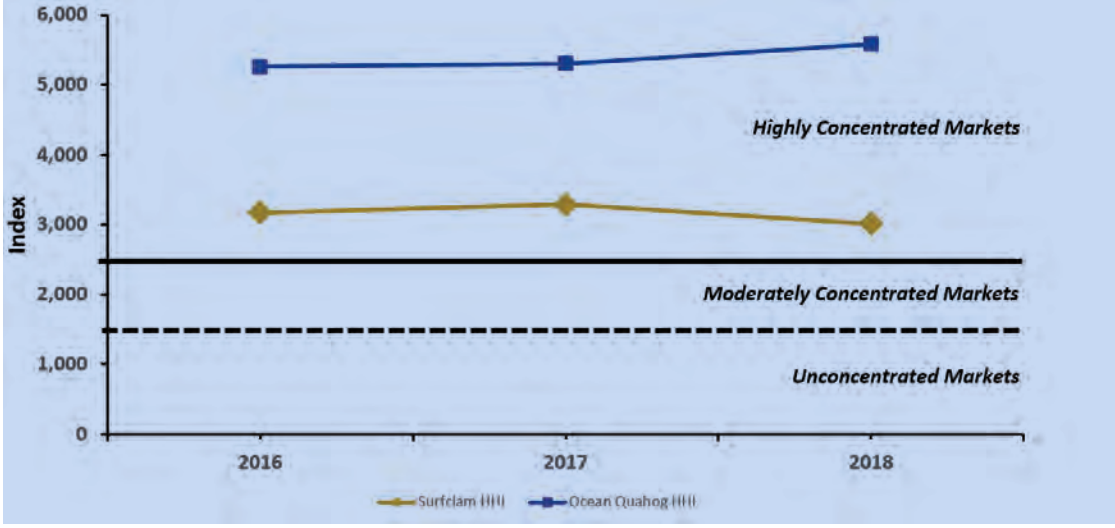


Figure 11. Herfindahl-Hirschman Index (HHI) of Market Concentration in Surfclam and Ocean Quahog Harvesting Sector, 1998-2008 (adapted from NMFS (2009)) and updated 2016-2018.

Note: As defined by DOJ, HHI values below the dashed horizontal line (1,500) shows Unconcentrated Markets; HHI values between the dashed horizontal line (1,500) and solid horizontal line (2,500) shows Moderately Concentrated Markets; HHI values above the solid horizontal line (2,500) shows Highly Concentrated Markets.

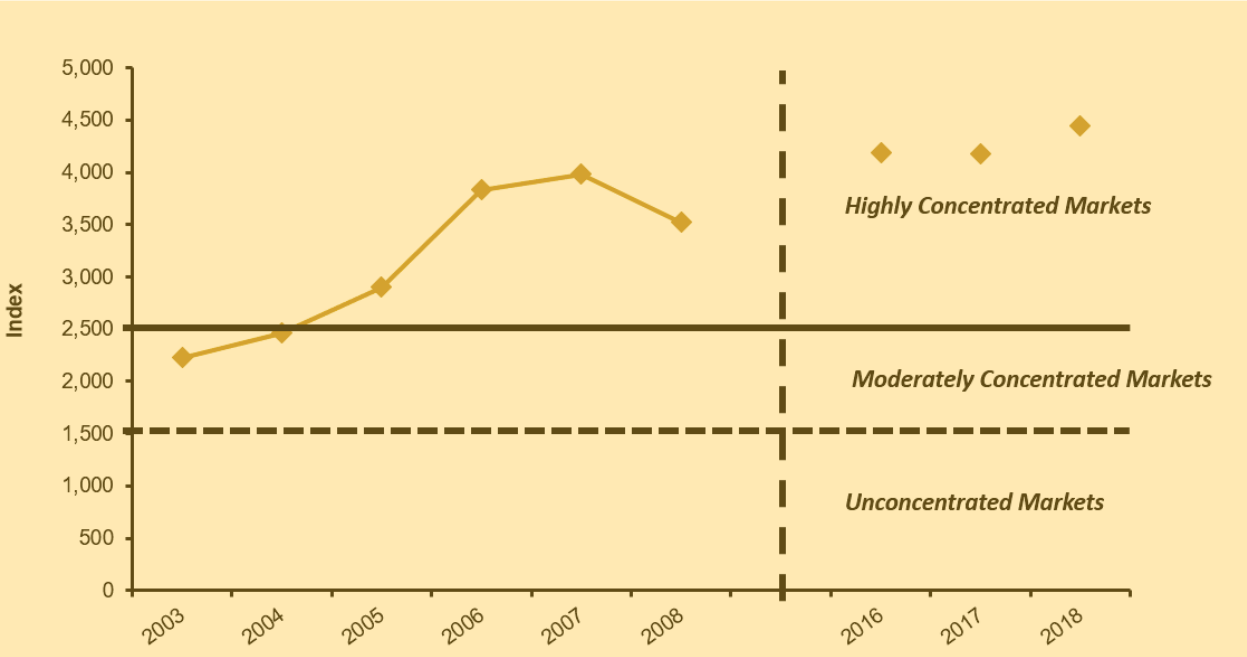


Figure 12. Herfindahl-Hirschman Index (HHI) of Market Concentration in Surfclam and Ocean Quahog Processing Sector (largely Vertically-Integrated), 2003-2008 (adapted from NMFS (2009)) and updated 2016-2018.

Note: As defined by DOJ, HHI values below the dashed horizontal line (1,500) shows Unconcentrated Markets; HHI values between the dashed horizontal line (1,500) and solid horizontal line (2,500) shows Moderately Concentrated Markets; HHI values above the solid horizontal line (2,500) shows Highly Concentrated Markets.

Brief Discussion on Market Power and Impacts on Competition

The Atlantic surfclam and ocean quahog limited access privilege program (LAPP) allows for the legal transferability of the "ownership" privileges. The advantage of transferability is that it provides flexibility and incentives to shift harvesting to lower cost vessels, which improves overall profitability of the fishing fleet. Some people argue that transferability has the potential to disrupt existing industry structure and also allows for fishery participants to gain from the sale of harvesting privileges rather than to use them to harvest fish. Since harvesting privileges are given away gratis on an annual basis, individuals or firms given these privileges can profit merely by holding quota, rather than fishing.

While transferability of harvesting privileges offers many potential advantages, a concentration of ownership can lead to several different types of problems. This can include problems with market power in the final product market (monopoly: a single seller; oligopoly: a few sellers), the input market (monopsony: a single buyer; oligopsony: a few buyers) for the fishery resource, or the quota share market. These problems are not unique to fisheries under LAPPs and can occur in other sectors of the economy as well. An additional problem associated with excessive ownership is that it can lead to undesired changes in the structure of the fishing community broadly defined (NMFS 2007).

One of the most obvious market power issues is monopoly power (pricing power on the product market), that could result from accumulation of significant quota shares. The pursuit of monopoly profits will lead to artificial reduction in output in the final fishery resource (product market) or also in the quota share market and increase in prices to the consumer. However, in most instances the risk of this happening is fairly small because the product from any one LAPP must compete with similar products from domestic and international fisheries. Unless the LAPP is associated with a unique fishery product with a separate niche market, this is unlikely to become a problem (NMFS 2007). Furthermore, processors in the surfclam and ocean quahog fisheries report that in order to meet the schedules set by their customers (many of which are large consumer goods companies, such as Progresso or Campbell's, or large food service companies, such as Sysco and others), virtually all clams are sold under contract between processors and harvesters or are harvested by processor affiliates.[39] Processors also indicate that these large sophisticated buyers are able to exert significant pricing power because of their large purchases and because they have the capability to substitute imported clams for domestic clams in their products if prices warrant.[40] The threat created by the ability of major customers to use other sources of clams has the potential to limit any efforts by processors to raise prices above competitive levels, and processors report feeling the effects of this pressure from their large customers (Mitchell et al. 2011).

The Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power (monopoly/oligopoly) is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries.[41] It is possible that under some circumstances an excessive shares cap of 100% may be appropriate for some fisheries. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011).

The CIE review of the Compass Lexecon report indicated that more attention should had been paid to the monopsony problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[42] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry and there with a small number of vessels and processors predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern than monopolization in the output market (Walden 2011).

[39] Therefore, processors do not "post" a price that they are willing to pay for clams at unloading points. There is no "spot" market for surfclams or ocean quahogs (Mitchell et al. 2011).

[40] Imports of other clam species also provide a substitute for some uses (and a small portion of the domestic surfclam and ocean quahog harvest is exported). Processors report competition from imported clams from a number of countries, including Canada, Thailand, Chile, and others (Mitchell et al. 2011). Lastly, it is possible that clam meat competes with other proteins in some uses. Data are not available to rigorously evaluate whether other proteins, such as chicken or shrimp, compete with clam meat sufficiently that the prices of these substitute proteins substantially constrain the price of clam meat (Mitchell et al. 2011).

[41] The Compass Lexecon report did not analyse whether market power is exercised through the withholding of harvesting or processing, or through exclusionary conduct other than conduct involving quota ownership (Mitchell et al. 2011).

[42] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

An analysis was conducted by NMFS in 2009 to assess excessive share issues in the surfclam and ocean quahog ITQ fisheries. They found that while the ownership of ITQ quota share is mildly concentrated for surfclam ITQ quota share and unconcentrated for ocean quahog ITQ quota share, the use of quota is highly concentrated. The concentration of harvesting has risen substantially during the ITQ program largely as the result of the backward integration of processors into harvesting and the proliferation of long-term contracts among ITQ quota share owners, vessel owners, and processing firms.

As a result of this increase in vertical integration and in long-term contracts, processors now have direct or indirect control over the use of the majority of ITQ quota share in the surfclam and ocean quahog fisheries (NMFS 2009). NMFS examined the possibility that control over such a large amount of ITQ quota share is leading to lower prices paid to independent vessels for their harvest. A formal tests for oligopsony power (few buyers) by surfclam and ocean quahog processors was not done in the analysis conducted by the NMFS in 2009. They presented both landings and ex-vessel price trends, but not draw any conclusions about why these trends are occurring. However, the 2009 NMFS report indicated that over the past 40 years, net exit has occurred in both the harvest and processing sectors for a variety of reasons. For example, some of the major factors may have included:

1) declines in resource biomass of both species, particularly off southern states and in waters closer to shore
2) declining catch rates for surfclams beginning in 2001
3) lack of access to the surfclam and ocean quahog resources on Georges Bank due to PSP
4) increasing costs of vessel operation, particularly fuel and insurance
5) changing the federal fisheries management program from effort-based regulations to individual transferable quotas. Decoupling harvest rights from vessels allowed unneeded vessels to exit the fisheries
6) industry's shift to using larger vessels with greater capacity necessitates fewer of them

For the processing sector, factors that may have led to fewer firms include:
1) decreased resource availability (as with the vessel sector);
2) changing consumer tastes for clam products;
3) the high capital costs of modern clam plants;
4) and perhaps most importantly, the high cost of equipment required to comply with stricter wastewater discharge regulations which resulted in many plants shutting down.

Taken together, these have led to the vertically integrated industry and the oligopsony market for surfclams and ocean quahogs which now exists according to the NMFS report.

Lastly, an additional type of problem that can result from concentration of ownership has to do with the lifestyle of fishing households and fishing communities. There could be significant philosophical support for the maintenance of a fishery composed of many diverse individuals. According to this opinion, even if concentration will not produce market power problems, it is something to be avoided for its own sake. However, this trade-off in economic returns from the fishery resource to maintain a social or community structure is a policy and prioritization question the Councils must sort through (NMFS 2007).

Total Allocations Being Fished

Table 14 shows surfclam and ocean quahog cage tag utilization by small and large allocation owners for the 2004-2006 and 2017 periods. In 2017, 35.7% of the surfclam quota was unused. The number of unused allocations for surfclams (based on 67 allocation holders) was 5, about 7%. For ocean quahog in 2017, 40.9% of the quota was unused. The number of unused allocations for ocean quahog (based on 37 allocations holders) was 15, about 41%. Of those allocation holders using their tags, 64% of surfclams and 59% of ocean quahog tags were used.

In the ocean quahog fishery, the proportion of cage tags not used is higher for small allocation owners when compared to large allocation owners for 2004-2006 and 2017. In the surfclam fishery, the proportion of cage tags not used is higher for small allocation owners when compared to large allocation owners for all years except 2017. In 2017, the small allocation owners left 11% of their cage tags unharvested, while large allocation owners did not use 39% of their cage tags. However, a closer look at the surfclam allocation ownerships for 2017, indicated that a large number of small allocation owners may also be owners of large allocations via partnerships and other complex contracting business practices that are prevalent in the fisheries. It is possible that some of the owners that have both, small and large surfclam allocations, may be harvesting the tags associated with their small allocations first before utilizing the tags associated with their larger allocations. For the years evaluated, the percentages of unused cage tags for small and large allocations owners tend to be relative closer to each other when larger proportions of the available quotas are harvested.

Transfer of Allocations

In these fisheries both permanent and temporary transfers occur. Temporary transfers can only be tracked annually and occur for many reasons. Bank lenders hold approximately 1/5 of the allocations; so, temporary transfers of tags by bank lenders and between related and unrelated business and corporate entities are frequent. In 2016, 41% of the surfclam tags and 26% of the ocean quahog tags were temporarily transferred (Northern Economics, Inc. 2019).

Table 14. Atlantic surfclam and ocean quahog allocation usage for 2004-2006 and 2017.

Year	Quota (million bushels)	Landings (million bushels)	% of quota unused	Total # allocations issued	Total # allocations that did not use any cage tags	Allocation owner by size*	% of total quota owned	# cage tags issued	# cage tags used	% cage tags unused
Surfclam										
2004	3.400	3.138	7.7%	84	2	Small Owners (43)	17.5%	18,641	17,068	8.4%
						Large Owners (41)	82.5%	87,614	80,821	7.8%
2005	3.400	2.744	19.3%	82	6	Small Owners (42)	18.2%	19,389	15,519	20.0%
						Large Owners (42)	81.8%	86,893	71,136	18.1%
2006	3.400	3.057	10.1%	82	7	Small Owners (41)	17.6%	18,731	13,381	28.6%
						Large Owners (40)	82.4%	87,551	81,347	7.1%
2017	3.400	2.186	35.7%	67	5	Small Owners (33)	11.7%	12,430	11,226	9.7%
						Large Owners (34)	88.3%	93,852	57,338	38.9%
Ocean Quahog										
2004	5.000	3.890	22.2%	56	9	Small Owners (28)	3.3%	5,146	3,172	38.4%
						Large Owners (28)	96.7%	150,887	116,887	22.5%
2005	5.333	3.006	43.6%	56	19	Small Owners (28)	3.3%	5,483	2,460	55.1%
						Large Owners (28)	96.7%	160,944	131,036	18.6%
2006	5.333	3.147	41.0%	56	23	Small Owners (28)	3.3%	5,483	2,253	58.9%
						Large Owners (28)	96.7%	160,944	94,231	41.5%
2017	5.333	3.149	40.9%	37	15	Small Owners (18)	4.0%	6,626	3,363	49.2%
						Large Owners (19)	96.0%	159,738	93,972	41.2%

*Allocations were considered to be "Small" or "Large" by sorting them from the smallest number of bushels to the largest, and then using the median to break them into two groups.

Landings, Quota Utilization, and Market Trends

Surfclams and ocean quahogs are processed into a variety of different products. The dominant use of surfclams has been in the "strip market" to produce fried clams. In recent years (Mid-2000s on), however, they have increasingly been used in chopped or ground form for other products, such as high-quality soups and chowders (MAFMC 2010). The dominant use of ocean quahogs has been in products such as soups, chowders, and white sauces. Their small meat has a sharper taste and darker color than surfclams, which has not permitted their use in strip products or the higher-quality chowders products (MAFMC 2010).

The quotas and landings levels and the percent of quota landed from 1980-2017 for surfclams and ocean quahogs are shown in Figures 13 and 14, respectively. For most years from 1990 (when the ITQ system was implemented) to 2003, the surfclam harvest levels were near or at full quota level. However, for the last decade or so (2008-2017), surfclam production has been below the quota. Surfclam landings have not reached the quota of 3.4 million bushels since it was set in 2004. It should be noted that both changes in landings and the changes in quota levels affect the quota utilization shown in Figures 13 and 14. Surfclam landings in 2017, reached a record low at 2.2 million bushels, the lowest landings level since the ITQ system was implemented which also corresponds to the lowest quota utilization (percentage of quota landed). In the last fifteen years, a downward trend in landings of surfclams is observed (Figure 13).

On the other hand, ocean quahog landings have consistently been below the quota for most years since 1990. Industry utilization of ocean quahogs has varied across the years, influenced by market conditions and the costs of harvesting. There was a shift toward greater utilization of quahogs in 1997 and 1998. Both years saw almost all of the quota harvested, while surfclam quota was left unharvested. However, this trend reverted back to the historical norm in 1999 as fuel prices spiked, when it became more expensive to harvest ocean quahogs that are found farther offshore. Higher fuel prices combined with increasing scarcity of dense ocean quahog beds resulted in an overall decline in ocean quahog harvests (MAFMC 2010). During 2001-2004, there was again a brief increase in ocean quahogs landings, with 80% or more of the ocean quahog quota landed. In the last fifteen years (2003-2017), a downward trend in landings of ocean quahogs is observed (Figure 14). Ocean quahog landings in 2017, were 3.1 million bushels, which also corresponds to one of the lowest quota utilizations (percentage of quota landed) since the ITQ system was implemented in 1990. Ocean quahog landings have not reached the quota of 5.3 million bushels since it was set in 2005.

According to industry members, the reduction in landings for surfclams and ocean quahogs in the mid-2000s was due to several factors related to reduction in product marketing/advertisement (e.g., clam chowder), limited markets, and competition from imported clams that are available from a relatively large number of countries, including Canada, Thailand, Vietnam, China, and Chile (MAFMC 2009, 2010, 2013; Mitchell et al. 2011). Surfclam and ocean quahog landings have been mainly constrained by market limitations.

Industry members have consistently asked the MAFMC to set the surfclam and ocean quahog quotas at levels lower than the overall ABC but to set the quotas for these two species at levels that are much larger than the market demand (landings) since the mid-2000s.

In 2017, there were companies that reported purchases of surfclam and/or ocean quahog from the industrial fisheries outside of Maine. These 9 companies operated 15 different facilities located in various state. Some of these companies have facilities in multiple states (section 6.4.4). For the most part, processors aim to meet supply schedules set by their customers which are large consumer good companies, such as Progresso or Campbell's, or large food service companies, such as Sysco. This requires that most clams are harvested and processed to meet set schedules.

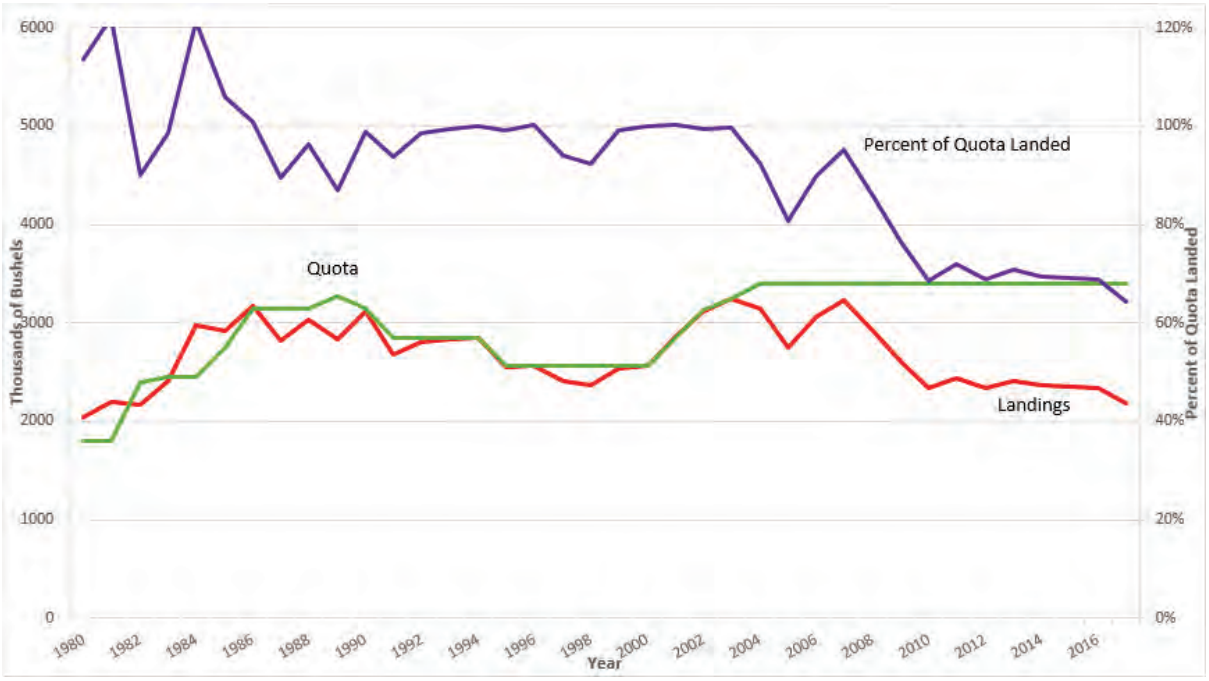


Figure 13. Surfclam landings, quotas, and percent of quotas landed, 1980-2017.
Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

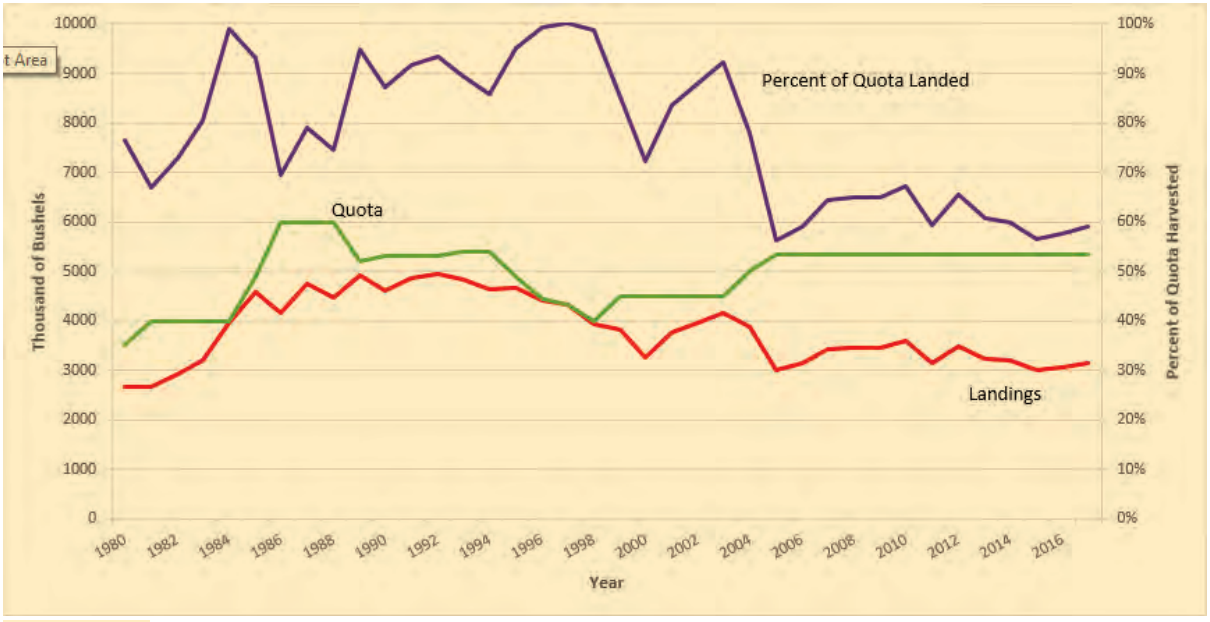


Figure 14. Ocean quahog landings, quotas, and percent of quotas landed, 1980-2017.
Source: NMFS Clam Vessel Logbook Reports. Dan Hennen Personal Communication, March 22, 2018.

Ex-vessel Revenues and Prices

Figures 15 to 18 show ex-vessel revenues and prices for surfclams and ocean quahogs in nominal and real values. As previously indicated (see Trends in Consolidation Section), a series of conditions resulted in a substantial portion of the industrial fleet leaving the clam fishery in 2005; in addition, increasing foreign competition and limited markets have resulted in decrease in landings (see Landings, Quota Utilization, and Market Trends Section). However, nominal ex-vessel prices remained relative stable during that last 10-15 years (Figures 17 and 18).

After the large surfclam ex-vessel revenue decrease in 2005, ex-vessel revenues increased to the 2003 levels, and then have a decreasing trend through 2010 (Figure 15). From 2010 through 2017, surfclam ex-vessel revenues have shown a slight upward trend despite low quota utilization (Figure 13) and significant decrease in the efficiency of harvesting operations (Figure 19). Ex-vessel prices for surfclam have been relatively stable for the 2010 through 2017 period with slight increases in more recent years (Figure 17).

Ex-vessel price for both species were relatively flat for the 2003 to 2007 period. In 2008, there was a slight increase in the price for both species that is likely related to the large increase in fuel costs in 2008, processors reported levying fuel surcharges on their customers for at least some period of time to cover increased harvesting costs. Ex-vessel price for both species show a steady upward trend from 2009-2017 (Figures 17 and 18).

However, Figures 17 and 18, show that the mean real price (adjusted prices) for both species have shown a downward trend for the 2003-2017 time period. While these trends by themselves yield no real answers about market power, taken together with increasing production prices, they do suggest that vessels were likely not improving their economic position.

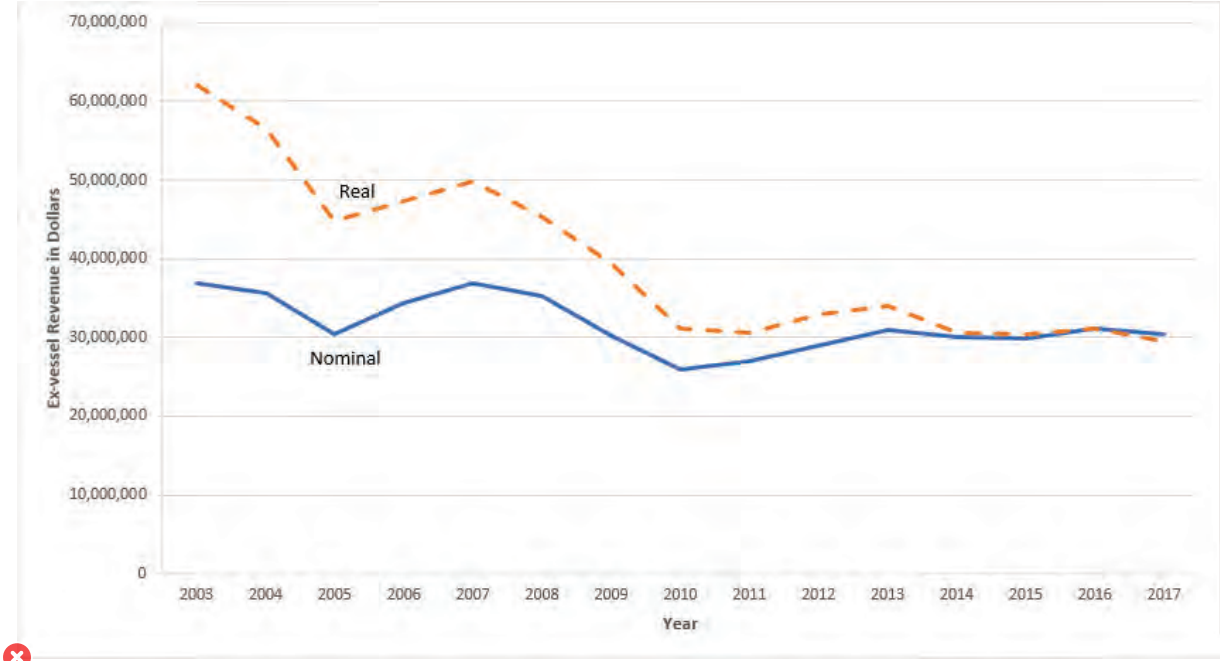


Figure 15. Surfclam ex-vessel revenue, 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

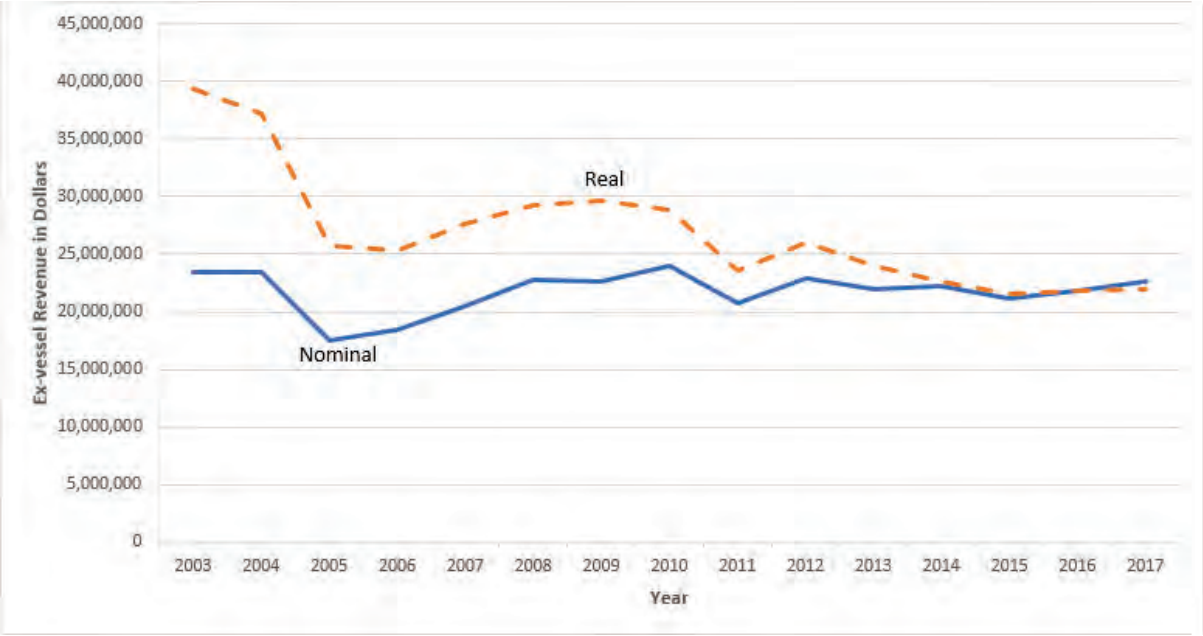


Figure 16. Ocean Quahog ex-vessel revenue, 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

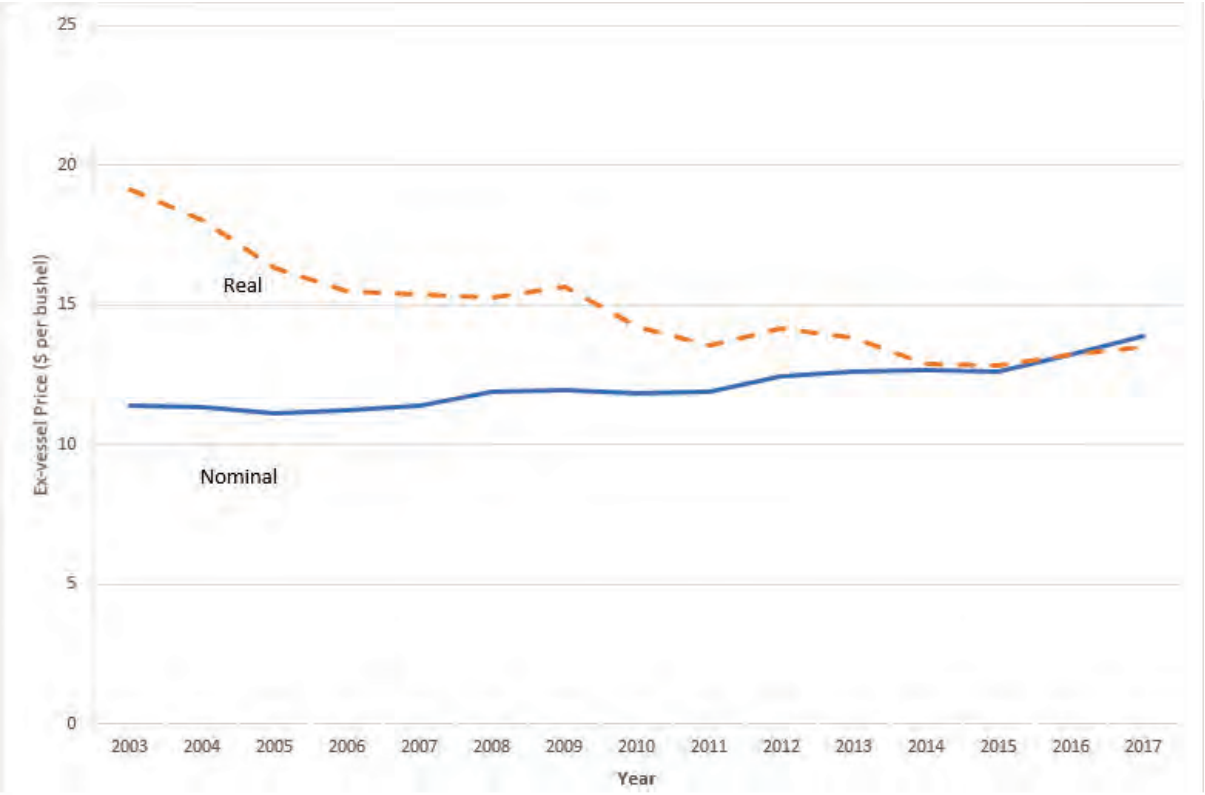


Figure 17. Surfclam ex-vessel price ($/bu), 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

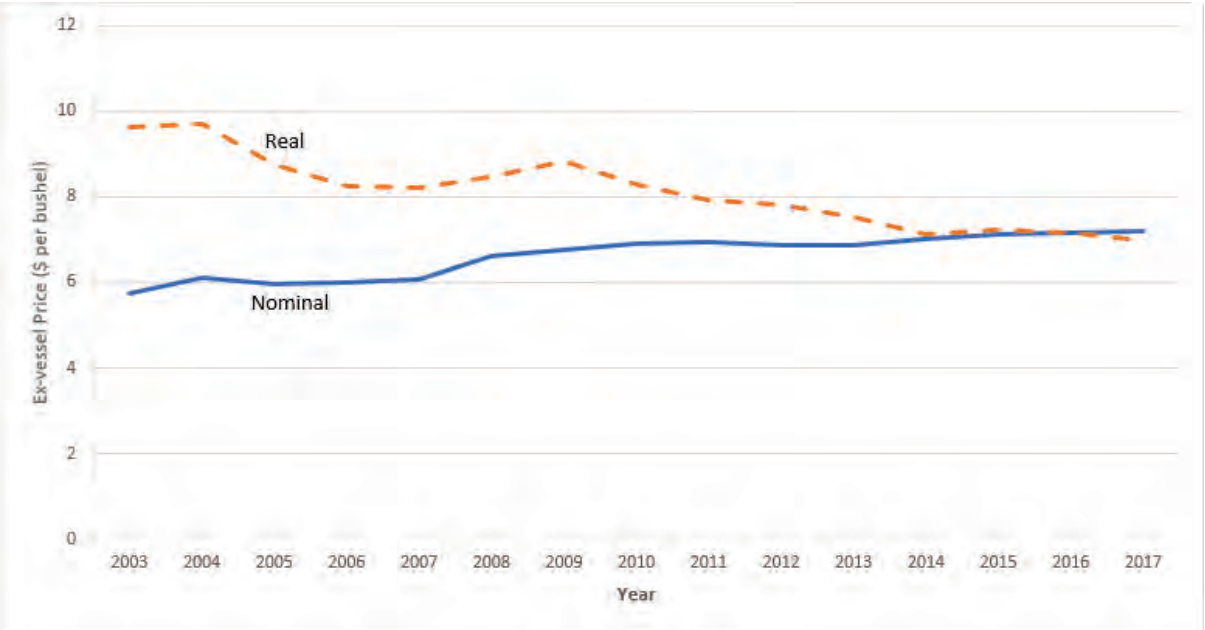


Figure 18. Ocean quahog ex-vessel price ($/bu), 2003-2017.
Source: Dealer data, NMFS. The Producer Price Index (PPI) used to convert nominal dollars to 2016 dollars for unprocessed and package fish, which includes shellfish and fish.

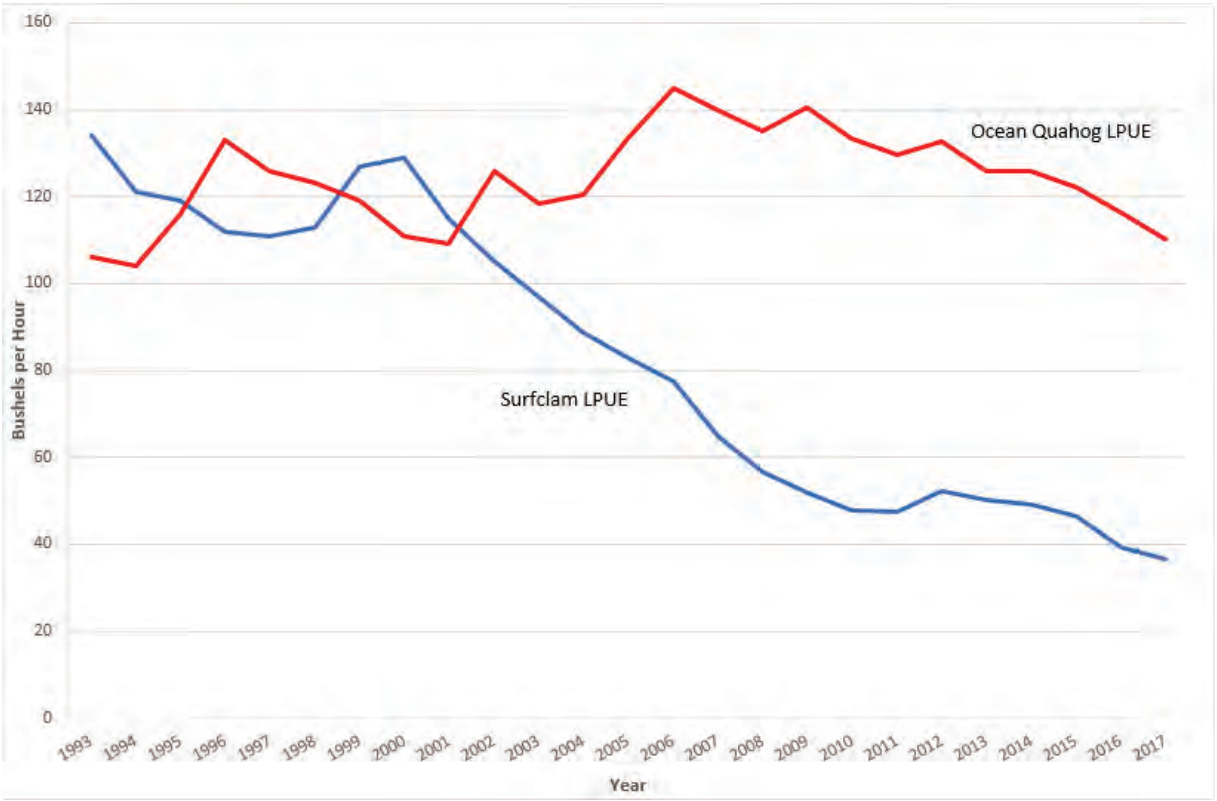


Figure 19. Surfclam and ocean quahog landings per unit effort (LPUE), 1993-2017. Source: NMFS Clam Vessel Logbook Reports.

Economic Performance - Harvesting Sector

Prior to the implementation of the ITQ program, excess harvesting capacity (overcapitalization) was a major problem and led to closures very quickly due to effort/time restrictions. In fact, the excess capacity was such, that it was believed that an increase in the annual quota within the range that at that time constituted optimum yield would have not alleviated this problem but could have further encouraged the existing vessels to increase vessel capacity through gear modifications (MAFMC 1988).

Given the large economic inefficiencies resulting from the overcapitalization of the fleet, the harvesting, and processing industries which depend upon them, were only marginally profitable. Furthermore, during the pre-ITQ period, the composition of the entire fleet shifted to larger vessels (MAFMC 1988). Larger vessels harvest more output per unit of input (on site). However, under effort management restrictions that constrained the time that vessels could fish for surfclams, both, small and large vessels harvested similar quantities of surfclams. As such, overall, larger vessels employed more fuel, labor, and capital services per unit of output when compared to smaller vessels. The benefit of larger unit output per unit of allocated inputs once the vessel has reached a fishing site were not realized under effort time/time restrictions (Weninger and Strand 2003).

In theory, an important benefit of ITQ systems are efficiency gains that may result from the implementation of property rights. Walden et al. (2012) pointed out that under an ITQ system,

vessels with the lowest harvesting costs can expand their catch by buying or leasing quota share from other, higher-cost vessels, leading to lower overall harvest costs and more efficient outcomes for society.

Theoretically, under the ITQ system, each harvester is able to use the lowest cost combination of fishing inputs (e.g., fuel, labor, materials) since they are allocated an exclusive share of the annual quota. In other words, they are incentivized to harvest the resource in a manner that is most efficient, and therefore, maximizing profits for their fishing operations as well as the industry as a whole.

Productivity is a key economic indicator at the household, firm, industry and national levels, and is a critical factor in economic growth (Färe, Grosskopf, and Margaritis 2008 cited in (Walden et al. 2014)). A productivity index can be used to measure the combined effects of changes in inputs and outputs in a fishery. More specifically, a productivity index can be used to describe how landings from fishing vessels and input to produce those landings change through time. This indicator is of importance, because changes in productivity are directly tied to changes in profit. As an example, if prices for the clams landed are stable, and the inputs (such as fuel used on a fishing trip) do not change, profits can increase if vessels are able to produce more landings (outputs) for a given level of inputs.

Productivity changes in the Atlantic surfclam and ocean quahog ITQ fisheries have been conducted by various researchers. Walden et al. (2014) conducted an evaluation of productivity change for all catch share fishery programs in the U.S. and Thunberg et al. (2015) measured changes in multi-factor productivity in U.S catch share fisheries. Multi-factor productivity (MFP) change is a measure of changes in quantities of inputs used to harvest fish and outputs produced. Changes in the MFP can be used to capture multiple dimensions of economic change associated with catch share programs (e.g., changes in product value and mix, costs and efficiency) in a single metric through time.

MFP may improve either by harvesting more fish with the same amount of inputs or by harvesting the same amount of fish using fewer inputs. It is expected that by ending the “race to fish” catch share programs may lead to improved productivity through the ability to better plan harvesting activities to change the mix of outputs and/or make better use of capital and other inputs. Furthermore, productivity gains may also be obtained through the transfer of quota from less to more efficient vessels (Walden et al. 2012).

Since changing resource conditions can influence output, the values reported by Walden et al. (2014) and Thunberg et al. (2015) were adjusted using a Lowe index to account for changes in biomass to estimate MFP. For a detailed treatment of methods and data see Walden et al. (2014) and Thunberg et al. (2015).

Walden et al. (2014) concluded that over the long-term, the biomass adjusted MFP (MFP is defined as a ratio of aggregate outputs to aggregate inputs) has remained above the pre-ITQ period baseline (1987-1989) in the surfclam fishery from 1990 through 2012 (the last year evaluated in the analysis). On a yearly basis, the biomass-adjusted productivity increased until 2003, then declined during the last eight years of the time period (Figure 20). Beginning in year 2000, the input index

started to increase, indicating that more inputs were being used to harvest the quota. This outcome is consistent with a declining biomass. When the stock declines and becomes more dispersed spatially, vessels will need to employ more inputs to harvest the same amount of output.

For ocean quahogs, the adjusted multi-factor productivity was above the pre-ITQ baseline for 19 of 23 years (Walden et al. 2014). The value of 1.82 in year 2012 indicates that the fishery was 82% more productive in 2012 than in the base line period. Most of the years showed slight increases or decreases in yearly productivity (Figure 20). The largest increase was in 21% in 2005 (1.21; year-to-year MFP change), while the largest decline was 13% in 2000 (0.87). For the entire period, the average year-to-years change was thee percent (1.03).

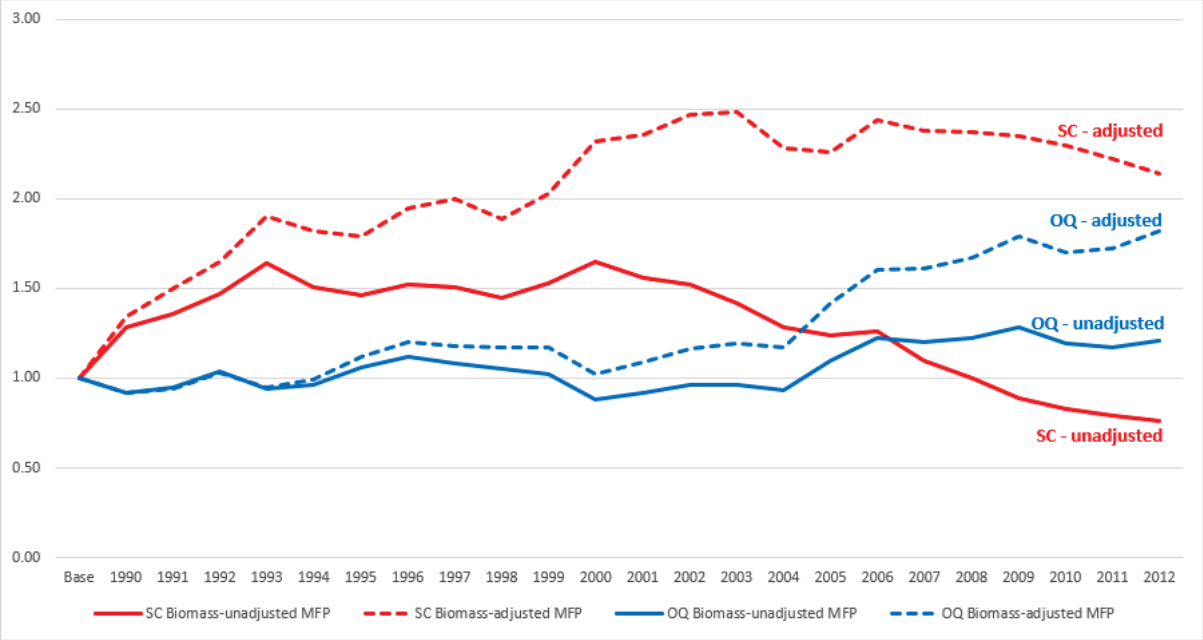


Figure 20. Biomass-adjusted and biomass-unadjusted marginal factor productivity for surfclam and ocean quahog, base period (1987-1989) and 1990-2012.

Brinson and Thunberg (2016) employed the Gini coefficient to measure changes in the distribution of the use of quota in terms of catch share revenue among active vessels for several catch share programs. These authors indicated that the trends in the Gini coefficient over time and not the absolute value are important in assessing evenness or equality. A Gini coefficient of 0 means that catch share revenues are the same for all active vessels, while a value approaching 1 means that catch shares revenues are highly concentrated in a single or among a small number of vessels. A decreasing Gini coefficient is indicative of increasing evenness or equality in catch share revenues, whereas an increasing Gini coefficient indicates decreasing evenness, or its opposite increasing inequality among participating vessels.

The Gini coefficient for surfclam during the first year of the ITQ program implementation was 0.37 (1990), a 16% increase from the 1987-1990 baseline period (0.32). The Gini coefficient has been steadily increasing since the surfclam ITQ system was implemented and reached a value of 0.50 in 2013 (the last year evaluated by the authors). For ocean quahogs, the Gini coefficient was 0.51 during the baseline period and it decreased to 0.48 during the first year of the ITQ program

implementation, and then steadily increased to 0.61 for most of the early 1990s to early 2000s. In 2013, the Gini coefficient for the ocean quahog fishery was 0.59 (Table 15). The overall performance analysis (assessing set of all indicators developed) for 16 catch share programs evaluated by Brinson and Thunberg (2016) indicated that in general terms the accumulation of ownership share may be less of a concern than consolidation in the use of quota, which includes the use of quota by entities as well any quota lease from other share owners.

Table 15. The Gini coefficient for the surfclam and ocean quahog catch share programs.

Catch Share Program	Baseline period (average 1987-1989)	Year 1	Average years 1-3	Average years 1-5	Last 5 year average	2013
Surfclam	0.32	0.37	0.45	0.46	0.49	0.50
Ocean Quahog	0.51	0.48	0.61	0.61	0.61	0.59

Source: Brinson and Thunberg (2016).

ITQ Program Review

The Council contracted Northern Economics, Inc. to develop a report for the review of the Atlantic surfclam and ocean quahog ITQ program. NOAA Catch Share Policy prepared in 2010 indicates that periodic reviews are expected of all catch share programs (CSPs), regardless of whether the program is a LAPP or when it was put in place. The review conducted by Northern Economics, Inc. fulfilled the program review requirements as described in the guidance for catch share reviews (NMFS 2017b). The review was completed and submitted to NMFS in June 2019 following a public comment period.

7.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This Environmental Assessment (EA) analyzes the expected impacts of each alternative on each VEC. When considering impacts on each VEC, the alternatives are compared to the current condition of the VEC. The alternatives are also compared to each other. The No Action alternatives describe what would happen if no action were taken. For all options considered in this document, the "no action" alternative would have the same outcomes as *status quo* management, therefore, these alternatives are at times described as "no action/*status quo*."

Environmental impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). Table 16 summarizes the guidelines used for each VEC to determine the magnitude and direction of the impacts described in this section.

The recent conditions of the VECs include the biological conditions of the target stocks, non-target stocks, and protected species over the most recent five years (sections 6.1 and 6.3). They also include the fishing practices and levels of effort and landings in the surfclam and ocean quahog fisheries over the most recent five years, as well as the economic characteristics of the fisheries over the most recent three to five years (depending on the dataset; section 6.4). The recent conditions of the VECs also include recent levels of habitat availability and quality (section 6.2). The current condition of each VEC is described in Table 17.

This EA analyzes the impacts of the alternatives described fully under section 5.0. For ease reference, those alternatives are listed here.

Excessive Share Alternatives

- Alternative 1: No Action/*Status Quo* (No limit or definition of an excessive share is included in the FMP)
- Alternative 2: Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)
  - Sub-Alternative 2.1: Quota share cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 2.2: Quota share cap at 49%
  - Sub-Alternative 2.3: Quota share cap at 95%
- Alternative 3: Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)
  - Sub-Alternative 3.1: Combined cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 3.2: Combined cap at 40%
  - Sub-Alternative 3.3: Combined cap at 49%
- Alternative 4: Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)
  - Sub-Alternative 4.1: Two-part cap based on highest level in the ownership data, 2016-2017
  - Sub-Alternative 4.2: Two-part cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation
  - Sub-Alternative 4.3: Ownership quota share cap at 30% and combined cap at 60%

- Alternative 5: Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota
- Alternative 6: Cap based on a 49% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota

Excessive Shares Review Alternatives

- Alternative 1: No Action/*Status Quo* (There are no requirements for review of implemented excessive shares measures)
- Alternative 2: Require periodic review of excessive shares measures that the Council adopts at specific intervals. At least every 10 years or as needed

Framework Adjustment Process Alternatives

- Alternative 1: No Action/*Status Quo* (No changes to the current list of measures that can be addressed under the framework adjustment process)
- Alternative 2: Add excessive shares cap levels to the list of measures to be adjusted via framework

Multi-Year Management Measures Alternatives

- Alternative 1: No Action/*Status Quo* (No changes to the process to set surfclam and ocean quahog management specifications for up to 3 years)
- Alternative 2: Specifications to be set for maximum number of years consistent with the Northeast Regional Coordinating Council (NRCC)-approved stock assessment schedule

The alternatives are not compared to a theoretical condition where the fisheries are not operating. These fisheries have occurred for many decades and are expected to continue into the foreseeable future. The nature and extent of the management programs for these fisheries have been examined in detail in EAs and Environmental Impact Statements (EISs) prepared for previously implemented management actions under the Atlantic Surfclam and Ocean Quahog FMP.

When considering overall impacts on each VEC, both surfclam and ocean quahog commercial fisheries are considered. This action does not propose any modifications to other management components (e.g., annual quota, minimum size, reporting requirements) and as such are not expected to affect the commercial fisheries in a manner that would change the impacts for any of the VECs considered.

In general, alternatives which may result in overfishing or an overfished status for target and non-target species may have negative biological impacts for those species, compared to the current condition of the VEC. Conversely, alternatives which may result in a decrease in fishing effort, resulting in ending overfishing or rebuilding to the biomass target, may result in positive impacts for those species by resulting in a decrease in fishing mortality (Table 16).

For the physical environment and habitat, alternatives that improve the quality or quantity of habitat or allow for recovery are expected to have positive impacts. Alternatives that degrade the quality or quantity, or increase disturbance of habitat are expected to have negative impacts (Table 16). In addition, alternatives that result in continued fishing effort may limit the recovery potential of some currently degraded areas and therefore result in slight negative impacts. The commercial

fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. The effects of clam dredges are short term and minimal because the fisheries occur in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats (section 6.2.3). Even in areas where habitat may be impacted by commercial gear or vessels, these areas are typically commonly fished by many vessels over many decades and are unlikely to see a measurable improvement in their condition in response to minor changes in measures or short-term changes in effort in an individual commercial fishery.

For protected species, consideration is given to both ESA-listed species and MMPA-protected species. ESA-listed species include populations of fish, marine mammals, or turtles at risk of extinction (endangered) or endangerment (threatened). For endangered or threatened species, any action that results in interactions with or take of those species or stocks is expected to have negative impacts, including actions that reduce interactions. Actions expected to result in positive impacts on ESA-listed species include only those that contain specific measures to ensure no interactions with protected species (i.e., no take). By definition, all species listed under the ESA are in poor condition and any take has the potential to negatively impact that species' recovery.

Under the MMPA, the stock condition of each protected species varies, but all are in need of protection. For marine mammal stocks/species that have their PBR level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 16). The impacts of each alternative on the protected resources VEC take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have exceeded or are in danger of exceeding their PBR level.

Socioeconomic impacts are considered in relation to potential changes in landings and prices, and by extension, revenues, compared the current fisheries conditions. Alternatives which could result in an increase in landings are generally considered to have positive socioeconomic impacts because they could result in increased revenues; however, if an increase in landings leads to a decrease in price or a decrease in SSB for any of the landed species, then negative socioeconomic impacts could occur. In addition, measures that would curtail entities from exerting market power and therefore not decreasing competition would have positive socioeconomic impacts. Lastly, measures that would result in community disruptions as result of additional consolidation (e.g., decrease in the number of independent harvesters, decrease in employment) would have negative socioeconomic impacts.

Excessive consolidation, in an economic context, is the level that moves the competitive condition in the market from one of pure competition to a situation where one or more firms can exert market power in the output (monopoly/oligopoly), or input market (monopsony/oligopsony). In the case of a quota market, it is one where we move from a condition of many buyers and sellers, to one where only a few buyers and sellers exist. In a social context, it is level that results in a less diverse

population of participants in the harvesting or processing sectors of the fishery, or that impedes the continued participation of small-vessel, owner/operator, and entry-level fishermen. Excessive consolidation can occur at the geographic level or at the harvesting and processing sectors of the fishery.

Expected Changes in Fishing Effort Under Alternatives Considered

The expected impacts to each VEC are derived from both consideration of the current condition of the VEC and the expected changes in fishing effort under each of the alternatives. It is not possible to quantify with confidence how effort will change under each alternative; therefore, expected changes are typically described qualitatively. However, the excessive shares alternatives presented in this document or the other alternatives analyzed (i.e., cap review; framework adjustment process; and multi-year management measures) are purely administrative and are not expected to have impacts on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. The proposed action is not expected to result in changes to the manner in which surfclam and ocean quahog fisheries are prosecuted.

Table 16. General definitions for impacts and qualifiers relative to resource condition (i.e., baselines) summarized in Table 17 below.

General Definitions				
VEC	**Resource Condition**	**Impact of Action**		
		Positive (+)	Negative (-)	No Impact (0)
Target and non-target Species	Overfished status defined by the MSA	Alternatives that maintain or are projected to result in a stock status above an overfished condition*	Alternatives that maintain or are projected to result in a stock status below an overfished condition*	Alternatives that do not impact stock / populations
ESA-listed protected species (endangered or threatened)	Populations at risk of extinction (endangered) or endangerment (threatened)	Alternatives that contain specific measures to ensure no interactions with protected species (i.e., no take)	Alternatives that result in interactions/take of listed species, including actions that reduce interactions	Alternatives that do not impact ESA-listed species
MMPA protected species (not also ESA-listed)	Stock health may vary but populations remain impacted	Alternatives that maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammals that could result in takes above PBR	Alternatives that do not impact MMPA protected species
Physical environment / habitat / EFH	Many habitats degraded from historical effort and slow recovery time (see condition of the resources table)	Alternatives that improve the quality or quantity of habitat or allow for recovery	Alternatives that degrade the quality/quantity or increase disturbance of habitat	Alternatives that do not impact habitat quality
Human communities (socioeconomic)	Highly variable but generally stable in recent years (see condition of the resources table for details)	Alternatives that increase revenue and social well-being of fishermen and/or communities	Alternatives that decrease revenue and social well-being of fishermen and/or communities	Alternatives that do not impact revenue and social well-being of fishermen and/or communities
Impact Qualifiers				
A range of impact qualifiers is used to indicate any existing uncertainty	Negligible	To such a small degree to be indistinguishable from no impact		
	Slight (sl), as in slight positive or slight negative	To a lesser degree / minor		
	Moderate (M) positive or negative	To an average degree (i.e., more than "slight", but not "high")		
	High (H), as in high positive or high negative	To a substantial degree (not significant unless stated)		
	Significant (in the case of an EIS)	Affecting the resource condition to a great degree, see 40 CFR §1508.27.		
	Likely	Some degree of uncertainty associated with the impact		

*Actions that will substantially increase or decrease stock size, but do not change a stock status may have different impacts depending on the particular action and stock. Meaningful differences between alternatives may be illustrated by using another resource attribute aside from the MSA status, but this must be justified within the impact analysis.

Table 17. Baseline conditions of VECs considered in this action, as summarized in section 6.

VEC		Baseline Condition	
		Status/Trends, Overfishing?	**Status/Trends, Overfished?**
Target stocks (section 6.1.1)	**Atlantic surfclam**	No	No
	Ocean quahog	No	No
Non-target species (principal species listed in section 6.1.2)	**Moon snail**	Unassessed	Unassessed
	Sea scallop	No	No
	Little skate	No	No
	Winter skate	No	No
Habitat (section 6.2)		Commercial fishing impacts are complex and variable and typically adverse; Non-fishing activities had historically negative but site-specific effects on habitat quality.	
Protected resources (section 6.3)	**Sea turtles**	Leatherback and Kemp's ridley sea turtles are classified as endangered under the ESA; loggerhead (NW Atlantic DPS) and green (North Atlantic DPS) sea turtles are classified as threatened.	
	Fish	Atlantic salmon, shortnose sturgeon, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are classified as endangered under the ESA; the Atlantic sturgeon Gulf of Maine DPS is listed as threatened; cusk, alewife, and blueback herring are candidate species	
	Large whales	All large whales in the Northwest Atlantic are protected under the MMPA. North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. Pursuant to section 118 of the MMPA, the Large Whale Take Reduction Plan was implemented to reduce humpback, North Atlantic right, and fin whale entanglement in vertical lines associated with fixed fishing gear (sink gillnet and trap/pot) and sinking groundlines.	
	Small cetaceans	Pilot whales, dolphins, and harbor porpoise are all protected under the MMPA. Pursuant to section 118 of the MMPA, the Harbor Porpoise Take Reduction Plan and Bottlenose Take Reduction Plan was implemented to reduce bycatch of harbor porpoise and bottlenose dolphin stocks, respectively, in gillnet gear.	
	Pinnipeds	Gray, harbor, hooded, and harp seals are protected under the MMPA.	
Human communities (section 6.4)		Surfclam and ocean quahog stocks support substantial industrial fisheries and related support services. 2017 estimated ex-vessel revenues were $31 and $23 million for surfclams and ocean quahogs respectively. Ports in New Jersey and Massachusetts handle the most volume and value, particularly Atlantic City and Point Pleasant, New Jersey, and New Bedford, Massachusetts. There are also landings in Ocean City, Maryland, and the Jonesport and Beals Island areas of Maine. The small scale Maine fishery is entirely for ocean quahogs, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclams and ocean quahogs, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products. In 2017, there were 67 surfclam and 37 ocean quahog allocations owners at the beginning of the fishing year. A total of 48 vessels were active in these fisheries in 2017, including a handful of independent vessels (less than 5).	

7.1 Impacts on Atlantic Surfclam and Ocean Quahog (Managed Species) and Non-Target Species

7.1.1 Excessive Shares Alternatives

Under alternative 1 (no action/*status quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. This alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0). The no action alternative is expected to have no impact on the prosecution of these clam fisheries, including landings levels, fishery distribution, or fishing methods and practices. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species). Alternative 1 is expected to have the same impacts (no impacts) on target species as alternatives 2-6 described below.

The no action alternative is not expected to impact non-target species caught in the surfclam and ocean quahog commercial fisheries. All of the species most commonly caught on directed clam trips have positive stock status, except for moon snails which are unassessed. As indicated above, the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices are not expected to change under this alternative. Therefore, the no action alternative is expected to have no impact on interaction of these fisheries with non-targeted species. Alternative 1 is expected to have the same impacts (no impacts) on non-target species as alternatives 2-6 described below.

Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. These alternatives are expected to have no impact on the prosecution of these surfclam and ocean quahog fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Alternatives 2-6 are expected to have no impacts (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Relative to each other, and alternative 1 (no action), alternatives 2-6 would have no impacts on both target species, and non-target species.

7.1.2 Excessive Shares Review Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

7.1.3 Framework Adjustment Process Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), the list of management measures that have been identified in the FMP that could be addressed via framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

7.1.4 Multi-Year Management Measures Alternatives

The alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog commercial fisheries. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for

up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fisheries resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on the target species (managed species) or non-target species caught in the surfclam and ocean quahog fisheries. Alternative 2 would have impacts on target species and non-target species that are the same as those under alternative 1.

Although there are no impacts on the VECs, alternative 2 would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

7.2 Impacts on the Physical Habitat and EFH

As described in section 7.0, the commercial fisheries for surfclam and ocean quahogs are prosecuted with clam dredges, a type of bottom tending mobile gear. The effects of clam dredges are short term and minimal because the fisheries occur in a relatively small area (compared to the area impacted by scallop dredges or bottom trawls) and primarily in high energy sand habitats. As described in section 7.1, the alternatives discussed in this section are expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices.

7.2.1 Excessive Shares Alternatives

Under alternative 1 (no action/*status quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts (no impacts) on habitat, including EFH as alternatives 2-6 described below.

Alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. Alternatives 2-6 are expected to have no impacts (direct or indirect) on habitat, including EFH. Relative to each other, and alternative 1 (no action), alternatives 2-6 would have no impacts on habitat, including EFH.

7.2.2 Excessive Shares Review Alternatives

Under alternative 1 (no action/*status quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.2.3 Framework Adjustment Process Alternatives

Under alternative 1 (no action/*status quo*), the list of management measures that have been identified in the FMP that could be addressed via the framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.2.4 Multi-Year Management Measures Alternatives

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information

regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on habitat, including EFH. Alternative 2 would have impacts on habitat, including EFH that are the same as those under alternative 1.

7.3 Impacts on Protected Resources

7.3.1 Excessive Shares Alternatives

Under alternative 1 (no action/*status quo*), no limit or definition of excessive shares accumulation is included in the FMP. As such, the current management approach to address excessive shares in the surfclam and ocean quahog ITQ fisheries would continue and therefore, the no action alternative is expected to have no impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Based on this information, and the fact that there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the fisheries, Alternative 1 is not expected to adversely affect any protected species provided in Table 11 (see section 6.3). For these reasons, the no action alternative is expected to have no impact on ESA-listed and/or MMPA-protected resources. Relative to alternatives 2-6, alternative 1 would have no impacts to protected species.

In addition, as described in section 7.1, the actions considered under alternatives 2-6 are administrative in nature and strictly consider a variety of approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. These alternatives are expected to have no impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. Based on this information, and the fact that there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the fisheries, alternatives 2-6 are not expected to adversely affect any protected species provided in Table 11 (see section 6.3). For these reasons, alternatives 2-6 are expected to have no impacts (direct or indirect) on ESA-listed and/or MMPA-protected resources. Relative to each other, and alternative 1, alternatives 2-6 would have no impacts on protected species.

7.3.2 Excessive Shares Review Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations of the excessive shares review alternatives on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/*status quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact (direct

or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.3.3 Framework Adjustment Process Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations of the framework adjustment process alternatives on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/*status quo*), the list of management measures that have been identified in the FMP that could be addressed via the framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of management measures that have been identified in the FMP that can be implemented or adjusted at any time during the year. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.3.4 Multi-Year Management Measures Alternatives

As described above (under excessive shares alternatives), there have never been documented interactions between protected species (ESA-listed and/or MMPA protected) and the primary gear type (i.e., clam dredge) used to prosecute the surfclam and ocean quahog fisheries. None of the alternatives discussed in this section are expected to impact on the prosecution of these clam fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices. The impact determinations on ESA-listed and/or MMPA-protected resources are based on this information.

Under alternative 1 (no action/*status quo*), the current management approach addressing surfclam and ocean quahog multi-year management specifications would continue. The no action alternative is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on ESA-listed and/or MMPA-protected resources. Alternative 2 would have impacts on protected species that are the same as those under alternative 1.

7.4 Impacts to Communities (Socioeconomic Impacts)

7.4.1 Excessive Shares Alternatives

Under alternative 1 (no action/*status quo*), no limit or definition of excessive shares accumulation is included in the FMP. Therefore, no specific limit or definition of an excessive share is included in the FMP as required under NS4 of the MSA. Under this alternative, the current management approach to address excessive shares would continue.

Amendment 8 to the FMP states that it relies on antitrust laws already in force which would cover the abuse of excessive shares (MAFMC 1988). The Council's intent under Amendment 8 was to have NMFS monitor the concentration of ITQ (as ITQ owners have to apply to NMFS to transfer ITQ) and if it seemed that excessive consolidation was occurring, they would advise the U.S. DOJ which would determine if antitrust laws were being violated (Joel McDonald Personal Communication, July 16, 2017). However, this monitoring of quota shares could not occur. This is because the creation of new business entities (e.g., LLC's, etc.) with ITQ ownership, and the lack of a regulatory mechanism to identify corporate officers or business partnerships across individuals or entities involved in ITQ ownership hampered the ability to determine whether there was a concentration of quota ownership, and whether competitive conditions were being eroded in the quota share market over time.

During the development of alternatives for this amendment, staff at the Council and GARFO (including General Council) spoke to the Antitrust Division of the DOJ about the role that they might play in the monitoring of excessive shares in the Atlantic surfclam and ocean quahog fisheries. The DOJ indicated that their Business Practice Process does provide a pre-enforcement review and advisory options for certain select transactions. However, the type of scenarios for

which the Business Review Process[43] has been used in the past have been for much larger, economically significant deals between companies than is envisioned by the Excessive Shares Amendment.[44]

Therefore, this alternative would leave the FMP out of compliance with the provisions of the MSA, as the Act requires that a process be established to define what constitutes excessive shares (section 4.0), and a means to track and monitor ownership relative to that definition is needed.

As previously described in section 6.4.5, the Compass Lexecon Report indicated that the industrial organization information reviewed did not support a conclusion that market power is currently being exercised through withholding of quota in the surfclam and ocean quahog fisheries. The qualitative evidence reviewed in the Compass Lexecon Report indicates that is unlikely that market power is being exerted in the product market (monopoly/oligopoly) in these fisheries.

In addition, it is argued that the availability of substitutes is the most important of the factors listed in determining the elasticity of demand[45] for a specific commodity (Leftwich 1973; Awk 1988). Seafood demand in general appears to be elastic (NMFS 2007). In fact, for most species, product groups, and product forms, demand is elastic (Asche and Bjørndal 2003). There are many substitutes for most fish products, including other types of fish and sources of protein from other animals (NMFS 2007). When demand is highly elastic, and substitutes are amply available, small changes in price lead to large changes in the quantity demanded. The large reductions in output caused by price increases generally limit the potential for the significant exercise of market power (because moving the market price substantially requires withholding, without revenue, a large quantity).

While current levels of share consolidation do not appear to result in market power in the product market (monopoly/oligopoly), it could create market power in the input market (monopsony/oligopsony) for the fishery resource, or the quota share market. In fact, the CIE review of the Compass Lexecon Report indicated that more attention should be paid to the *monopsony* problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the monopoly problem. The condition of TAC not binding and quota prices of zero[46] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry with a small number processors and vessels predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern that monopolization in the output market (Walden 2011).

Monopsony power could be exercised by processors over harvesters by reducing their demand for harvesting services, lowering the market price of harvesting services and increasing profits to the processing sector. However, if a processor owns a harvester, that firm would not benefit by

[43] For a detailed description of the Business Review process of the DOJ see: https://www.justice.gov/atr/business-reviews

[44] Sarah Heil, letter to Chis Moore, PhD, June 1, 2018.

[45] Price elasticity of demand is a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price when nothing but the price changes.

[46] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

underutilizing its own harvesting assets in order to depress the price of harvesting services. The processor will be motivated to use its own harvesting capacity when the incremental value of the harvest to the processor exceeds the incremental cost of harvesting, without regard for the effect of the additional harvesting on the market price of harvesting services. As a result, vertically integrated processors will increase harvest levels over those non-vertically integrated processors would choose were they to have influence over the market price of harvesting services (Mitchell et al. 2011). Lastly, from a social perspective, concentration of ownership and control could affect the social and community structure and participation in these fisheries. For example, from a social perspective, it is possible that under additional vertical integration the number of vessels participating in the fisheries could decerase further. Vertically integrated companies could choose to retire older less efficient vessels (for larger, newer, more efficient ones). In addition, there could be further departure of the few independent harvesters still participating in the fisheries. Vertical integration allows individual processors to exert control from the time a clam is harvested from the sea bed to the sale and transport of the final clam products from their facilities.

The no action alternative is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, under alternative 1, there would be no limit or definition of excessive shares accumulation included in the FMP. As such, it could potentially lead to one entity holding 100% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Alternative 1 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions. Alternative 1 could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.

Under alternative 2, a single cap on how much quota share one individual or entity could hold would be established separately for surfclams and ocean quahogs. The cap would be based on quota share ownership with unlimited leasing of annual allocation (cage tags)[47] throughout the year.[48] Because alternative 2 is based on ownership-only values, none of the sub-alternatives discussed below account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. Participants in these fisheries have reported that they are various types of transactions involving ITQs that commonly occur, including temporary and permanent ITQ transfers, long-term ITQ leases (e.g., five years or more) and transfers of bushel tags from bank lenders and between related and unrelated business entities.

This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight.

Under Sub-Alternative 2.1, the single quota share caps would be based on the highest level of quota share held by any individual or entity reported in the ownership data for each fishery (i.e.,

[47] There would be no limit of how much annual allocation (cage tags) an individual or entity could use or transfer during the fishing year.
[48] All excessive share alternatives are applicable throughout the year.

surfclams and ocean quahogs) for the 2016-2017 period.[49] The single caps under this alternative would depend on the determination of ownership quota shares levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer). Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

The highest level of quota share held (owned) by any individual or entity for surfclam was 28% under both the net actual percentage model and cumulative percentage model regardless of affiliation levels analyzed (Table 2). For example, when you consider results for the cumulative 100% model at the individual/business affiliation level, the highest level of quota share held by a single individual/business was 28% in each 2016 and 2017. This means that a single individual or business held (owned) 28% of the total surfclam ITQ allocation during 2016-2017. This level of ownership does not change when the family level affiliation is considered because that individual/business with the highest holdings did not report family members holding additional allocations. Similarly, the 28% quota share value did not change when the corporate officer level affiliation was considered, as that individual/business did not report any officer(s) in their company that have other interests in other companies that also hold surfclam quota shares. However, those levels do vary across affiliation levels for other individual entities that occur below the cap. Only maximum values are shown in that Table 2. The highest level of quota share held (owned) by any individual or entity for ocean quahogs was 22% under both the net actual percentage model and cumulative percentage model regardless of affiliation levels analyzed for the same reasons identified above for surfclams (Table 3).

As indicated above, the highest level of quota share held by any individual or entity during the 2016-2017 period was 28% for surfclams and 22% for ocean quahogs (Tables 2 and 3). If fully consolidated, a 28% cap for surfclams could potentially result in a minimum of four large entities participating in the fishery (i.e., four large entities at 28%, 28%, 28%, and 16%). This implies at least four entities holding surfclam quota, which may provide some protection against predation or foreclosure of competitors. If fully consolidated , a 22% cap for ocean quahogs could potentially result in a minimum of five large entities participating in the fishery (i.e., five large entities at 22%, 22%, 22%, 22%, and 12%).[50] This implies at least five entities holding ocean quahog quota, which may provide some protection against predation or foreclosure of competitors. As previously indicated, "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails" (Walden 2011). However, as indicated in section 5.0, it is also possible that under all alternatives evaluated, the resulting number of minimum entities could be larger than estimated in this document if full consolidation is not achieved.

[49] On average, for the 2016-2017 period, 67% of the surfclam quota and 58% of the ocean quahog quota were landed (Table 4).

[50] The resulting number of minimum entities under excessive shares alternatives 2 through 4 assume that market demand equals supply. When this is not the case, the leasing market could be disrupted (because available quota is larger than product demand) which could result in smaller firms or entities not associated with a processor be driven out of business.

The number of entities above and below specific maximum cap values for the various alternatives and sub-alternatives discussed in section 7 are presented in Tables 18-21.[51] If the surfclam and ocean quahog cap levels described above (28% and 22%, respectively) had been implemented in 2017, all entities would have fallen at or below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.1 in the surfclam or ocean quahog fisheries.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This sub-alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. Therefore, while sub-alternative 2.1 would establish a relatively low single cap quota share ownership of 28% that limits the exercise of market power through capping ownership levels for surfclams, it does not address the creation or exercise of market power through contractual control of quota.

Sub-alternative 2.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

[51] See Box 7.4 for a brief description of common terminology and definitions used in Tables 18-21.

Box 7.4. Terminology associated with the models and affiliation levels presented in Tables 18 to 21.	
Models	
Net Actual Percentage Model	Each owner's share in an LLC or company is used to determine percentage (%) ownership in that business's quota share. Example: John owns 50% of a company, he is assumed to hold 50% of the quota share held by the company. When calculated, the credits and debits are tabulated throughout the year at the time of each transaction, and the maximum net balance that a person attained in a year is used for this determination.
Cumulative 100% Model	Any ownership interest in a quota share by an individual is calculated as 100% of that quota share. Example: John owns 50% of a company, but in this scenario, he is assumed to hold all (100%) of the quota share held by that company when determining overall quota holdings. When calculated, the credits (lease and quota share inputs) accrue over the year for each person; debits or leases out and permanent transfers out are not included in this calculation; and the total accrued credits for a year are used in the determination.
Affiliation Levels	
Individual/Business Level	Smallest unit at the individual level or business (if an individual owner cannot be identified).
Family Level	Includes any family associations that are not already accounted at the individual or business level.
Corporate Officer Level	Includes association through corporate officer's that are not accounted for in the other levels.
PCT	Percentage
sm, lg	Small, Large

Under Sub-Alternative 2.2, the single cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 18).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.2 in the surfclam or ocean quahog fisheries.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This sub-alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. Therefore, while sub-alternative 2.2 would establish a single cap quota share ownership of 49% that limits the exercise of market power

through capping ownership levels for surfclams, it does not address the creation or exercise of market power through contractual control of quota.

Sub-alternative 2.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under Sub-Alternative 2.3, the single cap would be 95% for surfclams and 95% for ocean quahogs. This sub-alternative is based on the recommendations made by the Surfclam and Ocean Quahog Committee. The 95% level was grounded on the argument that industry participants cannot exert market power in the final product market (monopoly/oligopoly). If fully consolidated, a 95% cap could potentially result in a minimum of two entities participating in the fisheries (i.e., one very large entity and one small entity at 95% and 5%; Table 18).

If the surfclam and ocean quahog cap levels described above (95% for surfclam and 95% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 18). As such, no entity would have been constrained by the cap levels under sub-alternative 2.3 in the surfclam or ocean quahog fisheries.

It is stated in the Compass Lexecon Report it is possible that under some circumstances an excessive shares cap of 100% may be appropriate. However, this does not appear to be the case for the surfclam and ocean quahog fisheries ITQ system under current conditions (Mitchell et al. 2011). Alternative 2.3 could potentially result in quota accumulation levels that are near identical to those under alternative 1 (*status quo* alternative). If one firm or entity controls 95% of the quota, there would be no market for leasing under the current quota levels for these species, as nearly all the quota would be held by a single entity.

As previously indicated under the *status quo* alternative, while current levels of share consolidation do not appear to result in market power in the product market (monopoly/oligopoly), it could create market power in the input market (monopsony/oligopsony) for the fishery resource, or the quota share market. In fact, the CIE review of the Compass Lexecon Report indicated that more attention should be paid to the *monopsony* problem, which is the ability of processors to exert market power on the harvesting sector. The CIE report indicates that this may be of greater concern than the

monopoly problem. The condition of TAC not binding and quota prices of zero[52] are also consistent with a monopsony scenario. Given that this is a vertically integrated industry with a small number processors and vessels predominately controlled by processors, the exercise of monopsony is of primary interest and it is a larger concern that monopolization in the output market (Walden 2011).

Monopsony power could be exercised by processors over harvesters by reducing their demand for harvesting services, lowering the market price of harvesting services and increasing profits to the processing sector. However, if a processor owns a harvester, that firm would not benefit by underutilizing its own harvesting assets in order to depress the price of harvesting services. The processor will be motivated to use its own harvesting capacity when the incremental value of the harvest to the processor exceeds the incremental cost of harvesting, without regard for the effect of the additional harvesting on the market price of harvesting services. As a result, vertically integrated processors will increase harvest levels over those non-vertically integrated processors would choose were they to have influence over the market price of harvesting services (Mitchell et al. 2011). Lastly, from a social perspective, concentration of ownership and control could affect the social and community structure and participation in these fisheries.

Sub-alternative 2.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 2.3 could potentially allow for share concentration levels similar to those under the current conditions and as such, it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Sub-alternative 2.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to negative in the long-term if consolidation patterns result in decreased competition for these fisheries when compared to current conditions. Sub-alternative 2.3 could result in further decrease or the elimination of independent harvesters (harvesters not vertically integrated) participating in these fisheries.

Comparisons Across Sub-Alternatives 2.1 to 2.3

In this section a comparison between sub-alternatives 2.1 through 2.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 2.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 2.2 and 2.3 as no entity would be above the caps (if they had been implemented in 2017). However, in the long-term, alternative 2.1 would have slight positive socioeconomic impacts compared to sub-alternative 2.2, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. For example, sub-alternative 2.1 could potentially result in a minimum of four (surfclam) to five (ocean quahog) large and efficient companies (e.g., with more than 10% market share), while sub-alternative 2.2 could potentially result in only two large and efficient companies (Table

[52] Processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low and near zero (Walden 2011, Mitchell et al. 2011).

18; if fully consolidated). An excessive-share cap of 28% for surfclams and 22% for ocean quahogs could potentially ensure that there would be at least four to five processors operating at reasonable output levels, respectively. Lastly, sub-alternative 2.1 would have positive socio-economic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.1 has the potential to provide a larger degree of protection against excessive consolidation (as sub-alternative 2.3 could potentially result in one large entity controlling 95% of the quota for surfclam and/or ocean quahogs).

Sub-alternative 2.2 would have less positive socioeconomic impacts in the long-term compared to sub-alternatives 2.1, as sub-alternative 2.2 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues. Lastly, sub-alternative 2.2 would have positive socioeconomic impacts in the long-term compared to sub-alternative 2.3, as sub-alternative 2.2 has the potential to provide a larger degree of protection against excessive consolidation.

Sub-alternative 2.3 would have negative socioeconomic impacts in the long-term compared to sub-alternatives 2.1 and 2.2, as sub-alternative 2.3 has the potential to provide the smallest degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 2.1 would result in the most positive impacts, sub-alternative 2.2 would result in the second most positive impacts, and sub-alternative 2.3 would result in the least positive impacts.

Table 18. Potential impacts of sub-alternatives 2.1, 2.2, and 2.3 (Single Cap – Quota share ownership-only with unlimited leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 2.1 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28%		28%		28%		28%		28%		28%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16
Ocean Quahog Values												
Cap value	22%		22%		22%		22%		22%		22%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12
Sub-Alternative 2.2 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); this cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing												
Surfclam Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Sub-Alternative 2.3 - Single Cap – Quota share cap only with unlimited leasing of annual allocation (cage tags); cap at 95% based on industry representatives indicating that there is no market power (no monopolistic behavior)												
Surfclam Values												
Cap value	95%		95%		95%		95%		95%		95%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5
Ocean Quahog Values												
Cap value	95%		95%		95%		95%		95%		95%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5	1 lg; 1 sm	95; 5

Table 19. Potential impacts of sub-alternative 3.1, 3.2, and 3.3 (Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 3.1 - Combined Cap –Combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28%		33%		44%		48%		49%		49%	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	28; 28; 28; 16	3 lg; 1 sm	33; 33; 33; 1	3 lg	44; 44; 12	2 lg; 1 sm	48; 48; 3	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	29%		29%		39%		41%		41%		41%	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	4 lg	29; 29; 29; 13	4 lg	29; 29; 29; 13	3 lg	39, 39, 22	3 lg	41; 41; 18	3 lg	41; 41; 18	3 lg	41; 41; 18
Sub-Alternative 3.2 - Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags); cap at 40% based on recommendations provided in the Compass Lexecon Report												
Surfclam Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	53	0	54	0	54	0	69	1	68	2	67	3
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Ocean Quahog Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	43	0	43	0	43	0	46	1	44	3	43	4
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Sub-Alternative 3.3 - Combined Cap – Combined quota share ownership plus leasing of annual allocation (cage tags); cap at 49% based on the golden tilefish IFQ cap (i.e., ownership plus leasing)												
Surfclam Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2
Ocean Quahog Values												
Cap value	49%		49%		49%		49%		49%		49%	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2	2 lg; 1 sm	49; 49; 2

Table 20. Potential impacts of sub-alternative 4.1, 4.2, and 4.3 (Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags)) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Sub-Alternative 4.1 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017												
Surfclam Values												
Cap value	28/28		28/33		28/44		28/48		28/49		28/49	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16	4 lg	28; 28; 28; 16
Ocean Quahog Values												
Cap value	22/29		22/29		22/39		22/41		22/41		22/41	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12	5 lg	22; 22; 22; 22; 12
Sub-Alternative 4.2 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on highest level in the ownership data, 2016-2017, plus 15% added to the maximum levels to allow for additional consolidation												
Surfclam Values												
Cap value	43/43		43/48		43/59		43/63		43/64		43/64	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14	3 lg	43; 43; 14
Ocean Quahog Values												
Cap value	37/44		37/44		37/54		37/56		37/56		37/56	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26	3 lg	37; 37; 26
Sub-Alternative 4.3 - Two-Part Cap Approach – A cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags); cap based on ownership quota share at 30% and combined cap at 60%												
Surfclam Values												
Cap value	30/60		30/60		30/60		30/60		30/60		30/60	
# entities below and above cap value	53	0	54	0	54	0	70	0	70	0	70	0
min # entities & PCTs	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10
Ocean Quahog Values												
Cap value	30/60		30/60		30/60		30/60		30/60		30/60	
# entities below and above cap value	43	0	43	0	43	0	47	0	47	0	47	0
min # entities & PCTs	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10	4 lg	30; 30; 30; 10

Table 21. Potential impacts of alternative 5 (Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota) for various maximum quota ownerships at the individual/business level, family level, and corporate officer level.

	Net Actual Percentage Model						Cumulative 100% Model					
	Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)		Individual / Business Level		Family Level (individual / business level +family level)		Corporate Officer Level (individual / business level +family level +corporate officer level)	
Alternative 6 - Cap based on a 40% quota share ownership-only with unlimited leasing of annual allocation (cage tags) plus a two-tier quota												
Surfclam Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	44	0	44	0	44	0	56	0	56	0	56	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20
Ocean Quahog Values												
Cap value	40%		40%		40%		40%		40%		40%	
# entities below and above cap value	42	0	42	0	42	0	45	0	45	0	45	0
min # entities & PCTs	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20	3 lg	40; 40; 20

Under alternative 3, a combined cap would be implemented – combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Under sub-alternative 3.1, the cap would be based on the highest level of combined cap held by any individual or entity reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) for the 2016-2017 period. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The combined caps under this alternative would depend on the determination of combined levels (quota share ownership plus cage tag leasing) under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

Under sub-alternative 3.1, depending on the affiliate level and model selected, the combined cap for surfclam could be as low as 28% under the net actual percentage model (at the individual/business level) or as high as 49% under the cumulative 100% model (at the corporate officer level; Table 2). Based on these combined cap values, sub-alternative 3.1 could result in a minimum number of large entities (if fully consolidated) in the surfclam fishery ranging from four under the net actual percentage model to two under the cumulative 100% model (Table 19). Under this alternative, depending on the affiliate level and model selected, the combined cap for ocean quahogs could be as low as 29% under the net actual percentage model (at the individual/business level) or as high as 41% under the cumulative 100% model (at the corporate officer level; Table 3). For ocean quahogs, this sub-alternative could result in a minimum number of large entities (if fully consolidated) ranging from four under the net actual percentage model to three under the cumulative 100% model (Table 19).

If the surfclam and ocean quahog combined cap levels described above had been implemented in 2017, all entities would have fallen below those combined caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the combined cap levels under sub-alternative 3.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. Sub-alternative 3.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, some of the potential lower combined cap values under this sub-alternative (e.g., 28%

under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.

Since this sub-alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 3.2, the combined cap would be 40% for surfclams and 40% for ocean quahogs. This is based on recommendations provided in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). "In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011). If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those combined caps under the net actual percentage model for both surfclams and ocean quahogs. However, under the cumulative 100% model, between one (1% of all entities) and three (4% of all entities) surfclam entities and between one (2% of all entities) and four (9% of all entities) ocean quahog entities would have had combined cap above these levels depending on the affiliation level (Table 19).

Sub-alternative 3.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. In general terms, sub-alternative 3.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. However, as indicated above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount

of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Since this sub-alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 3.3, the combined cap would be 49% for surfclams and 49% for ocean quahogs. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value for a tilefish combined cap (i.e., ownership plus leasing). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%; Table 19).

If the surfclam and ocean quahog combined cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 19). As such, no entity would have been constrained by the cap levels under sub-alternative 3.2 in the surfclam or ocean quahog fisheries.

Sub-alternative 3.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 3.3 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a combined cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Comparisons Across Sub-Alternatives 3.1 to 3.3

In this section a comparison between sub-alternatives 3.1 through 3.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

Sub-alternative 3.1 would have no socioeconomic impacts in the short-term compared to sub-alternatives 3.2 and 3.3, as in general terms, no entity would be above the caps (if they had been implemented in 2017; the exception to this generality is listed below). In the long-term, alternative 3.1 would have no socioeconomic impacts in the long-term compared to sub-alternative 3.2, because they both could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 19). The exception to this generalization would be sub-alternative 3.1 under the cumulative 100% model which would result in two large entities participating in the surfclam fishery, and as such, provides a lesser degree of protection against excessive consolidation and associated market power and social issues. As such, this results in long-term positive impacts that are smaller in magnitude. Lastly, in general terms, sub-alternative 3.1 would have positive socioeconomic impacts in the long-term compared to sub-alternative 3.3, as sub-alternative 3.1 has the potential to provide a larger degree of protection against excessive consolidation. However, some of the potential lower combined cap values under sub-alternative 3.1 (e.g., 28% under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 3.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 3.2 and 3.3.

In general terms, sub-alternative 3.2 would have slight positive socioeconomic impacts in the long-term compared to sub-alternatives 3.3, as sub-alternative 3.2 has the potential to provide a larger degree of protection against excessive consolidation and associated market power and social issues. However, as noted above, if sub-alternative 3.2 had been implemented in 2017 (under the cumulative 100% model) up to 4 entities (depending on the affiliate level chosen) would have had combined caps above 40%. As such, this sub-alternative would had negatively impacted those entities if implemented in 2017. It is important to mention that under this scenario (sub-alternative 3.2 and cumulative 100% model), those impacted entities would have been required to decrease their combined values (combined quota share ownership plus leasing of annual allocation (cage tags)) which could had been accomplished by slightly reducing (between 1% and 7%) the amount of surfclam and/or ocean quahog cage tags leased that year. These 4 impacted entities would have incurred slight negative socioeconomic impacts in the short-term and long-term compared to current conditions.

Sub-alternative 3.3 would have slightly less positive socioeconomic impacts in the long-term compared to sub-alternatives 3.1 and 3.2, as sub-alternative 3.3 has the potential to provide a smaller degree of protection against excessive consolidation and associated market power and social issues.

In general terms, when ranking these three sub-alternatives, sub-alternative 3.1 would result in the most positive impacts, sub-alternative 3.2 would result in the second most positive impacts, and sub-alternative 3.3 would result in the least positive impacts.

Under Alternative 4, a two-part cap approach would be implemented for each surfclams and ocean quahogs, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). This is based on recommendations for a two-part cap provided in the Compass Lexecon Report. Mitchell et al. (2011) indicated that "the preference for short-term accumulations in the two-part cap limits the share of long-term quota controlled by any single party, which limits the ability to foreclose competitors by withholding quota on a committed multiseason basis." Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). Since this alternative limits the leasing of annual allocation (cage tags), it accounts for transactions and complex contracting business practices that occur in these fisheries.

Under sub-alternative 4.1, the two-part cap approach which includes one cap on allocation ownership and one combined cap (allocation ownership plus leasing of annual allocation or cage tags) would be based on the highest levels reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) during the 2016-2017 period. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. The two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Tables 2 and 3.

Under sub-alternative 4.1, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 28% ownership / 28% combined under the net actual percentage model (at the individual/business level) or as high as 28% ownership / 49% combined under the cumulative 100% model (at the corporate officer level; Tables 2 and 20). Based on these combined cap values, sub-alternative 4.1 could result in a minimum number of four large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 22% ownership / 29% combined under the net actual percentage model (at the individual/business level) or as high as 22% ownership / 41% combined under the cumulative 100% model (at the corporate officer level; Tables 3 and 20). For ocean quahogs, this sub-alternative could result in a minimum number of five large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.1 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.1 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.1 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. Furthermore, some of the potential lower two-part cap values under this sub-alternative (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.2, the two-part cap approach would be based on values reported in the ownership data for each fishery (i.e., surfclams and ocean quahogs) during the 2016-2017 period (as done under sub-alternative 4.1). However, under this sub-alternative, 15% is added to the maximum values reported in the ownership data for 2016-2017 to allow for additional consolidation (Table 20). The 15% value was recommended by some industry representatives and is expected to provide flexibility for efficient firms in the surfclam and ocean quahog fisheries to consolidate further if market conditions allow. The species-specific cap levels do not have to be the same for surfclam and ocean quahogs. As with sub-alternative 4.1, the two-part cap values under this alternative would depend on the determination of two-part cap levels under the cumulative 100% model or net actual percentage model and affiliate level (e.g., individual/business, family, or corporate officer) selected by the Council. Specific maximum values for various models and level of analysis (e.g., affiliate levels) are presented in Table 20.

Under sub-alternative 4.2, depending on the affiliate level and model selected, the two-part cap for surfclam could be as low as 43% ownership / 43% combined under the net actual percentage model (at the individual/business level) or as high as 43% ownership / 64% combined under the cumulative 100% model (at the corporate officer level; Table 20). Based on these combined cap values, sub-alternative 4.2 could result in a minimum number of three large entities (if fully consolidated) in the surfclam fishery regardless of model or affiliation level used (Table 20). Under this alternative, depending on the affiliate level and model selected, the two-part cap for ocean quahogs could be as low as 37% ownership / 44% combined under the net actual percentage model (at the individual/business level) or as high as 37% ownership / 56% combined under the cumulative 100% model (at the corporate officer level; Table 20). For ocean quahogs, this sub-

alternative could result in a minimum number of three large entities (if fully consolidated) in the ocean quahog fishery regardless of model or affiliation level used (Table 20).

If the surfclam and ocean quahog two-part cap levels described above had been implemented in 2017, all entities would have fallen below those caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the two-part cap levels under sub-alternative 4.2 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.2 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.2 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Under sub-alternative 4.3, the ownership quota share cap would be 30% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) would be 60%. These values are based on recommendations for a two-part cap provided in the Compass Lexecon Report. A 30% ownership cap and a 60% combined cap (quota share ownership plus leasing of annual allocation or cage tags) could potentially result in a minimum of four large entities (if fully consolidated) participating in the fisheries (i.e., 30%, 30%, 30%, 10%; Table 20).

If the surfclam and ocean quahog two-part cap levels described above (i.e., 30%/60%) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 20). As such, no entity would have been constrained by the cap levels under sub-alternative 4.3 in the surfclam or ocean quahog fisheries.

Sub-alternative 4.3 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, sub-alternative 4.3 is expected to have socioeconomic impacts ranging from no impact

in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues.

Since this sub-alternative would implement a two-part cap, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). As previously indicated, an excessive share could result in market power for a firm or entity. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Comparisons Across Sub-Alternatives 4.1 to 4.3

In this section a comparison between sub-alternatives 4.1 through 4.3 is made. This is different from the previous section where each of these sub-alternatives where compared to current conditions.

In general terms, sub-alternatives 4.1, 4.2, and 4.3 are likely to have neutral socioeconomic impacts (e.g., similar magnitude and direction) in the short-term and long-term, because they all could potentially result in a similar minimum number of entities (three of four large entities) participating in these fisheries (Table 20). In general terms, sub-alternatives 4.1 and 4.3 would result in neutral socioeconomic impacts in the short-run and long-run but marginally positive compared to sub-alternative 4.2. As such, they all have the potential to provide a relatively similar degree of protection against excessive consolidation and associated market power and social issues. In addition, none of these sub-alternatives would result in any entity been above the caps (if they had been implemented in 2017). However, some of the potential lower two-part cap values under sub-alternative 4.1 (e.g., 28% ownership / 28% combined under the net actual percentage model at the individual/business affiliation level) could potentially disrupt future realization of efficient-enhancing economies of scale, as it would not allow for expansion beyond any of these lower combined cap values. As such, under these sub-alternative 4.1 specific cases, there would be negative socioeconomic impacts in the long-term compared to sub-alternative 4.2 and 4.3.

Under Alternatives 5, a cap on quota share ownership-only of 40% for surfclams and 40% for ocean quahogs with unlimited leasing of annual allocation (cage tags) would be implemented. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

The 40% cap under this alternative is based on recommendations found in the Compass Lexecon Report and corresponding CIE review (Mitchell et al. 2011, Walden 2011). In the business literature, there is a widely accepted notion that a Rule of Three structure is optimal because three big and efficient companies (e.g., with more than 10% market share) act as a tripod to ensure that

neither destructive competition nor collusion prevails." And "An excessive-share cap of 40% assures that there would be at least three processors operating at reasonable output levels" (Walden 2011).

This alternative would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). The FMAT noted that the "two-part system" (i.e., cap on ownership plus Quota A/B shares) would not be needed if the ACT (or overall quota level) was aligned each year with the anticipated market demand. Alternatively, an advantage of a "two-part system" is that it allows additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year. If fully consolidated, a 40% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., three large entities at 40%, 40%, and 20%; Table 21).

As described in section 6.0, the surfclam and ocean quahog fisheries are quite special and unique in the following aspects. First, harvested surfclams and ocean quahogs must be processed before sale (e.g., clam strips, chopped or ground form for other products, such as high-quality soups and chowders). As such, processing requires more than simply heading and gutting. Second, there are a few byers of the processed products (e.g., Campbell Soup Company, Progresso, or large food service companies, such as Sysco). Lastly, for a number of years, the TAC has not been harvested.

The level the industry is willing and able to produce and sell in a given year, *ceteris paribus* (all else being equal) is the market equilibrium output (MEO). As indicated before, the current condition for both species is TAC [ACT] > MEO. A plausible explanation for the current state of excessive consolidation in the industry follows these three unique aspects in both fisheries. Given the share concentration levels in the processing sector, some processors could produce the MEO level of production with their own annual shares, and all other shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, in order to fulfill the market demand, all of the catch shares will have to be utilized and all ITQ shareholders would be able to utilize their shares and the monopsony power would disappear. Since the condition in these fisheries is that the TAC > MEO, some catch share owners cannot rent or sell their shares due to the monopsony power of the processors. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs (SSC 2019).[53]

If the surfclam and ocean quahog cap levels described above (40% for surfclam and 40% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; Table 21). As such, no entity would have been constrained by the cap levels under alternative 5 in the surfclam or ocean quahog fisheries.

As indicated above, in addition to the cap on quota share ownership, this alternative would also establish Quota A and B shares (for each individual species). A hypothetical example of how the

[53] Report of the May 2019 SSC Meeting. Available at: http://www.mafmc.org/ssc.

two quota-tier system (Quota A shares and Quota B shares) would work is presented in section 5.1.5. In general terms, this alternative would align Quota A shares (the initial quota level) with recent years landings (a proxy for market demand). Quota A shares (and associated number of cage tags) would be released at the onset of the fishing year and Quota B shares (and associated number of cage tags) would be released when Quota A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. However, if the supply of quota released under Quota A shares equals the market demand, there may be less incentive for a quota holder to enter into long-term contracts. One of the reasons long-term contracts exist is that if a quota holder doesn't enter into one, then there is a real possibility that they won't be able to lease their quota out at all in a given fishing year as the overall quota level for these fisheries have been at values that exceed market demand. It is possible that under this alternative, if there is less of an incentive to enter into long-term leases, their arrangements may change if the price of leases increase.

The Atlantic Surfclam and Ocean Quahog Information Collection Program Data (Ownership Data) was designed to gather information on leases (short-term and long-term) to assist in determining contractual control of quota. However, industry members have indicated that they would not release this information as some people consider it private. As such, it is not likely that contractual control of quota can be accurately tracked.

Alternative 5 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, alternative 5 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase.

Furthermore, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. However, this is not expected to increase the cost of harvesting. The real cost of harvesting and processing should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners (SSC 2019; see footnote number 53 on page 150).

Surfclam and Ocean quahog processors have indicated in the past that they cannot influence the price of the products they sell, as the large companies that purchase from them (Campbell Soup Company, Progresso, etc.) will not consider price increases as they can buy other raw materials to produce their products. As such, it would be expected that profits for the processing sector would go down. In conclusion, while not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. If this alternative is selected by the Council additional analysis should be conducted to determine the appropriate trigger level.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. For example:

- It was indicated that establishing a Quota A and Quota B shares system would send a market signal indicating that the surfclam and ocean quahog quotas (TACs) have been reduced, because the amount of quota released under Quota A shares is lower than the overall TACs that have been implemented in recent years. This in turn could result in big companies that purchase clam products (Progresso, Campbell Soup Company, etc.) to switch to lower quality foreign imports
- Quota A and Quota B shares system would disrupt banking/financial arrangement because ITQ shares have been used as collateral in securing long-term loans
- Aligning the quota with market demand may not necessarily result in equilibrium because long-term contacts arrangement (leasing arrangements) exist in these fisheries; and breaking existing long-term contracts could result in lawsuits
- Aligning the quota with market demand would give market power to the industry members that have not been able to lease/use their ITQ shares in recent years
- This alternative could result in closing of processing plants
- There is the potential for someone to lease large quantities of A shares and not use them to develop market power

Under Alternatives 6, a cap on quota share ownership-only of 49% for surfclams and 49% for ocean quahogs with unlimited leasing of annual allocation (cage tags) would be implemented. In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted. This cap is similar to the golden tilefish IFQ cap which allows for a 49% maximum share cap value; however, in tilefish, it is applied to ownership and leasing combined. The only difference between alternatives 5 and 6 are the cap levels on quota share ownership, all other aspects of the alternatives are identical.

Like alternative 5, this alternative would also align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). If fully consolidated, a 49% cap could potentially result in a minimum of three entities participating in the fisheries (i.e., two large entities and one small entity, at 49%, 49%, and 2%). The resulting number of participating entities under this alternative are similar to those under sub-alternative 2.2 (which would also implement a 49% quota share cap; Table 18).

As described in section 6.0, the surfclam and ocean quahog fisheries are quite special and unique in the following aspects. First, harvested surfclams and ocean quahogs must be processed before sale (e.g., clam strips, chopped or ground form for other products, such as high-quality soups and chowders). As such, processing requires more than simply heading and gutting. Second, there are a few byers of the processed products (e.g., Campbell Soup Company, Progresso, or large food service companies, such as Sysco). Lastly, for a number of years, the TAC has not been harvested.

The level the industry is willing and able to produce and sell in a given year, *ceteris paribus* (all else being equal) is the market equilibrium output (MEO). As indicated before, the current condition for both species is TAC [ACT] > MEO. A plausible explanation for the current state of excessive consolidation in the industry follows these three unique aspects in both fisheries. Given the share concentration levels in the processing sector, some processors could produce the MEO level of production with their own annual shares, and all other shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, in order to fulfill the market demand, all of the catch shares will have to be utilized and all ITQ shareholders would be able to utilize their shares and the monopsony power would disappear. Since the condition in these fisheries is that the TAC > MEO, some catch share owners cannot rent or sell their shares due to the monopsony power of the processors. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs (SSC 2019; see footnote number 53 on page 153).

If the surfclam and ocean quahog cap levels described above (49% for surfclam and 49% for ocean quahog) had been implemented in 2017, all entities would have fallen below those quota share caps regardless of ownership percentage model (e.g., net actual percentage or cumulative 100% model) or affiliation level (e.g., individual/business, family, or corporate office; see results under

sub-alternative 2.2 in Table 18). As such, no entity would have been constrained by the cap levels under alternative 6 in the surfclam or ocean quahog fisheries.

As indicated above, in addition to the cap on quota share ownership, this alternative would also establish Quota A and B shares (for each individual species). A hypothetical example how the two quota-tier system (Quota A shares and Quota B shares) would work is presented in section 5.1.5. In general terms, this alternative would align Quota A shares (the initial quota level) with recent years landings (a proxy for market demand). Quota A shares (and associated number of cage tags) would be released at the onset of the fishing year and Quota B shares (and associated number of cage tags) would be released when Quota A shares are used/exhausted.

Since the cap under this alternative is based on ownership-only, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative allows leasing to continue and does not impose a limit on leasing. Essentially, the leasing market would be allowed to proceed without Government oversight. However, if the supply of quota released under Quota A shares equals the market demand, there may be less incentive for a quota holder to enter into long-term contracts. One of the reasons long-term contracts exist is that if a quota holder doesn't enter into one, then there is a real possibility that they won't be able to lease their quota out at all in a given fishing year as the overall quota level for these fisheries have been at values that exceed market demand. It is possible that under this alternative, if there is less of an incentive to enter into long-term leases, their arrangements may change if the price of leases increase.

The Atlantic Surfclam and Ocean Quahog Information Collection Program Data (Ownership Data) was designed to gather information on leases (short-term and long-term) to assist in determining contractual control of quota. However, industry members have indicated that they would not release this information as some people consider it private. As such, it is not likely that contractual control of quota can be accurately tracked.

Alternative 6 is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions. However, alternative 6 is expected to have socioeconomic impacts ranging from no impact in the short-term to positive impact in the long-term compared to current conditions, as it provides protection against excessive consolidation and associated market power and social issues. An outcome of obtaining market power could be pricing power in either output (product), or input (factor) markets, or the ability to disrupt other firms or entities from participating in the market. In addition, excessive shares consolidation patterns could also result in community disruptions resulting in decrease in the number of independent harvesters and employment. Therefore, from a social perspective, excessive shares consolidation could affect the social and community structure and participation in these fisheries.

Since this alternative would implement a two quota-tier system (Quota A shares and Quota B shares), it would align supply in the fisheries with market demand, an issue raised in a number of reports (Compass Lexecon Report and corresponding CIE review; Mitchell et al. 2011, Walden 2011). This could result in more activity in the leasing market and prevention of exclusionary

practices. While this may in turn benefit quota holders that have not been able to use (due to market demand) or lease (due to a depressed leasing market) their quota allocations in recent years, it may adversely impact current entities that lease quota if quota lease prices increase.

Furthermore, current participants may be compelled to lease additional allocations (before Quota B shares are released) from other industry participants in order to maintain their previous levels of harvest. However, this is not expected to increase the cost of harvesting. The real cost of harvesting and processing should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc. Processors will likely have to pay more in financial costs (due to additional leasing and/or purchase costs), which will decrease net revenue due to the loss in monopsony power which will be transferred to fully participating ITQ owners (SSC 2019; see footnote number 53 on page 153).

Surfclam and Ocean quahog processors have indicated in the past that they cannot influence the price of the products they sell, as the large companies that purchase from them (Campbell Soup Company, Progresso, etc.) will not consider price increases as they can buy other raw materials to produce their products. As such, it would be expected that profits for the processing sector would go down. In conclusion, while not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

Lastly, while not likely, there could be quota allocation holders that may not want to lease their quota allocations out thus impeding the release of Quota B shares. If this were to occur, landings could be affected and additional flexibility for increasing harvests if there is a surge in demand for surfclams or quahogs midway through the fishing year could not be met. One way to address this issue could be to release Quota B shares when 90 or 95% of Quota A shares have been used. If this alternative is selected by the Council additional analysis should be conducted to determine the appropriate trigger level.

During the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed under alternative 5 and also apply here.

Comparisons Across All Excessive Shares Alternatives

In general terms, alternatives 5 and 6 would result in the largest positive impacts as a result of protection against market power or other anticompetitive behaviors and associated social issues, alternatives 3 and 4 would result in the second highest positive impacts, alternative 2 would result in the third highest positive impacts, and alternative 1 would result in the least positive impacts. More detail of the expected impacts is provided below.

Alternative 1 (No Action/Status Quo)

As previously indicated, under alternative 1 (no action) no limit or definition of excessive shares accumulation is included in the FMP. This alterative is expected to result in impacts ranging from no impacts in the short-term to negative impacts in the long-term when compared to alternatives 2 through alternative 6, because alternative 1 provides no protection against excessive consolidation and associated market power and social issues. The exception would be when alternative 1 is compared to sub-alternative 2.3, as sub-alternative 2.3 could potentially allow for share concentration levels similar to those under alternative 1, and it could potentially lead to one entity holding 95% of the ITQ allocation in the surfclam and/or ocean quahog fisheries. Compared to sub-alternative 2.3, alternative 1 is likely to have a similar magnitude of socioeconomic impacts (i.e., neutral).[54]

None of the excessive share alternatives discussed in this document are expected to impact the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. As such, no changes in ex-vessel revenues are expected when compared to current conditions.

Alternative 2

Alternative 2 would implement a single cap based on quota share ownership-only with unlimited leasing of annual allocations (cage tags). Because alternative 2 is based on ownership-only values, it does not account for leasing or other transactions and complex contracting business practices (e.g., ownership and control through leasing) that are prevalent in the fisheries when setting the cap limit. This alternative would limit the exercise of market power through capping ownership levels for surfclams and ocean quahogs, but it does not address the creation or exercise of market power through contractual control of quota.

Alternative 2 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 3 and alternative 4, alternative 2 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternatives 3 and 4).

Lastly, alternative 2 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

[54] Since sub-alternative 2.3 is likely to result in impacts similar to those under alternative 1, all other comparisons involving alternative 2 exclude sub-alternative 2.3, with the understanding that when comparisons are made with sub-alternative 2.3 exclusively, impacts would be similar to those under alternative 1 (no action/*status quo*).

Alternative 3

Alternative 3 would implement a combined cap based on quota share ownership plus leasing of annual allocation (cage tags). Because alternative 3 is based on combined ownership plus leasing of annual allocation (cage tags), it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Alternative 3 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 3 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 3). Compared to alternative 4, alternative 3 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 3 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 4

Alternative 4 would implement a two-part cap approach, with a cap on quota share ownership and a cap on combined quota share ownership plus leasing of annual allocation (cage tags). Because alternative 4 is based on a two-part cap approach that limits combined quota share ownership plus leasing, it would limit the exercise of market power that could be derived through both quota ownership and contractual control of quota. This alternative imposes a combined limit on ownership plus leasing, which would account for transactions and complex contracting business practices that occur in these fisheries.

Alternative 4 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because it provides protection against excessive consolidation and associated market issues. Compared to alternative 2, alternative 4 is expected to have similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) but slightly larger in magnitude as alternative 2 does not address the creation or exercise of market power through contractual control of quota (as done under alternative 4). Compared to alternative 3, alternative 4 is likely to have a similar magnitude of socioeconomic impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both would

limit the exercise of market power that could be derived through both quota ownership and contractual control of quota.

Lastly, alternative 4 is expected to result in similar directional impacts compared to alternatives 5 and 6 (i.e., no impacts in the short-term to positive impacts in the long-term) but smaller in magnitude because alternatives 5 and 6 not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices.

Alternative 5

Alternative 5 would implement a cap on quota share ownership-only with unlimited leasing of annual allocation (cage tags). In addition, this alternative would also establish Quota A and B shares (for each individual species), where A shares is the current 3-year landings level (to be defined; e.g., rolling average; average highest 3 years out of the last 5 years) and B shares is the difference between the ACT (or overall quota level) and A shares. B shares are not released until all A shares are used/exhausted.

Alternative 5 is expected to result in impacts ranging from no impacts in the short-term to positive impacts in the long-term when compared to alternative 1, because alternative 5 not only addresses the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also aligns supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. For these same reasons, alternative 4 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) compared to alternatives 2, 3, and 5, but likely smaller in magnitude. Lastly, compared to alternative 6, alternative 5 is expected to result in similar directional impacts (i.e., no impacts in the short-term to positive impacts in the long-term) as they both not only address the exercise of market power through capping ownership levels for surfclams and ocean quahogs but also align supply in the fisheries with market demand. Aligning supply in the fisheries with market demand may result in more activity in the leasing market and prevention of exclusionary practices. While not quantifiable, there may be distributional impacts associated with this alternative, as processors may need to lease quotas, but this would be offset with gains in the leasing market.

However, as indicated above, during the development of the Public Hearing Draft Document for the Excessive Shares Amendment, stakeholders representing processing firms indicated that the implementation of this alternative would result in unintended short and long-term negative socioeconomic impacts that would disrupt current business practices. These potential impacts were listed above under alternative 5.

Alternative 6

The expected impacts under alternative 6 are similar to those described under alternative 5 above.

7.4.2 Excessive Shares Review Alternatives

Under alternative 1 (no action/*status quo*), there would not be a requirement for periodic review of the excessive shares measures. The no action alternative is expected to have no impact on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, or fishing methods and practices. Therefore, the no action alternative is expected to have no impact on the quantity of surfclam or ocean quahog landings, including revenues. However, as previously indicated, conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. Therefore, an excessive shares measure established at an appropriate level now could over time become inefficiently high (offering too little constraint on the exercise of market power) or low (offering too much constraint on efficient competitive activity in the industry). Thus, not having a mechanism in place to review the effectiveness of implemented excessive shares measures could result in socioeconomic impacts that range from no impacts (if implemented excessive shares measures or cap level is appropriate through time) to slight negative (if implemented excessive shares measures or cap level is not appropriate through time). Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and would require periodic review of the excessive shares measures at specific intervals. At least every 10 years or as needed. As with the no action alternative above, alternative 2 is not expected to have impacts on the quantity of surfclam or ocean quahog landings, including revenues. However, this alternative allows periodic review of excessive shares measures that the Council adopts. As previously indicated conditions in the fisheries have changed over time since the FMP was implemented and the ITQ system became effective, and those conditions are likely change in the future. This alternative would implement a periodic review of regulations to protect against market power or other anticompetitive behaviors in these fisheries in a timely manner. Alternative 2 is expected to result in socioeconomic impacts ranging from no impacts to slight positive. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts. While it is not possible to anticipate the potential management costs associated with alternative 2, they are likely to be higher than those associated with alternative 1. Costs will depend on the complexity and scope of the review process.

7.4.3 Framework Adjustment Process Alternatives

Under alternative 1 (no action/*status quo*), the list of management measures that have been identified in the FMP that could be addressed via framework adjustment process would not change (i.e., maintain the *status quo* measures that can be added or modified via the framework adjustment process). This alternative would not allow the excessive shares cap to be modified via the framework adjustment process.

The Council would still have the prerogative to review any adopted excessive shares measures and make modifications to any implemented excessive cap level through an amendment if it becomes inefficiently high or low through time as fisheries conditions change. However, making modifications to existing regulations using an amendment process requires more work and time compared to a framework process. Not having the flexibility to make minor modifications to the excessive shares cap level (no action alternative) could result in socioeconomic impacts ranging

from no impact to slightly negative. Compared to alternative 2, alternative 1 is expected to have slight negative socioeconomic impacts.

Alternative 2 is administrative in nature and strictly considers the expansion of the list of framework adjustment measures that have been identified in the FMP. This alternative would add adjustments to the excessive shares cap level to the list of frameworkable actions in the FMP. This frameworkable item would allow modifications to the cap value only (e.g., increasing or decreasing cap values from X% to Y%) and not the underlying cap system (e.g., changing single cap system approach to a two-part cap approach or model or affiliation level used to implement cap). The proposed alternative would provide flexibility to address potential modifications to any implemented excessive cap level if it becomes inefficiently high or low through time as fisheries conditions change. Alternative 2 is expected to result in socioeconomic impacts that range from no impact to slight positive. Compared to alternative 1, alternative 2 is expected to have slight positive socioeconomic impacts because this alternative provides the flexibility to adjust potential modifications to any implemented excessive cap level if it becomes inefficiently or low through time as fisheries conditions change, and this has the potential to reduce needed staff time and management cost.

7.4.4 Multi-Year Management Measures Alternatives

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set surfclam and ocean quahog management specifications for up to 3 years. The no action alternative is expected to have no socioeconomic impacts. Alternative 1 is expected to have the same impacts as alternative 2.

Alternative 2 is administrative in nature as this action deals entirely with the periodicity by which the annual management measures are specified. Under alternative 2, specifications could be set for up to the maximum number of years consistent with the NRCC-approved stock assessment schedule. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fishery resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no socioeconomic impacts. Alternative 2 would have socioeconomic impacts that are the same as those under alternative 1.

Although there are no socioeconomic impacts associated with alternative 2, it is expected that it would provide for substantial administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fisheries between stock assessments (i.e., efficient use of Council and NOAA staff time supporting the management process; thus, reducing staff time and management cost).

7.5 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ; 40 CFR §1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective. Rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required under NEPA as part of an EA if the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed surfclams and ocean quahog fisheries.

7.5.1 Consideration of the VECs

The following sections discuss the significance of the cumulative effects on the following VECs:

- Managed resource (Atlantic surfclam and ocean quahog) and non-target species
- Physical environment
- Protected species
- Human communities

7.5.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of Atlantic surfclam and ocean quahog. The Western Atlantic Ocean is the core geographic scope for each of the VECs. The core geographic scopes for the managed species are the management units (section 6.1). For non-target species, those ranges may be expanded and would depend on the range of each species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by surfclam and ocean quahog and non-target species in the Western Atlantic Ocean. The core geographic scope for protected species is their range in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities in coastal states from Maine through Virginia directly involved in the harvest or processing of the managed species (section 6.4).

7.5.3 Temporal Boundaries

The temporal scope of past and present actions for VECs is primarily focused on actions that have occurred after FMP implementation (1977 for surfclam and ocean quahog). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.3) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about three years (2022) into the future. This period was chosen because the dynamic nature of resource management and lack of information on projects that may occur in the future make it very difficult to predict impacts beyond this timeframe with any certainty.

7.5.4 Actions Other Than Those Proposed in this Document

The impacts of the alternatives considered in this document are described in sections 7.1 through 7.4. Table 22 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions other than those considered in this document. The impacts of these actions are described qualitatively as the actual impacts are too complex to be quantified in a meaningful way. When any of these abbreviations (P, Pr, or RFF), occur together it indicates that some past actions are still relevant to the present and/or future actions.

Fishery Management Actions

Surfclam and Ocean Quahog FMP Actions

Past, present, and reasonably foreseeable future actions for surfclam and ocean quahogs management include the establishment of the original FMPs, all subsequent amendments and frameworks, and the setting of annual specifications (annual catch limits and measures to constrain catch and harvest). These fisheries are managed under an ITQ system, and recently, the NMFS implemented a data collection protocol process to collect information about quota share ownership that would enhance the management of these fisheries. The historical management practices of the Council have resulted in overall positive impacts on the health of the surfclam and ocean quahog stocks (section 7.5.5.1). The Council has taken many actions to manage the associated commercial fisheries. The MSA is the statutory basis for federal fisheries management. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Other FMP Actions

In addition to the Atlantic Surfclam and Ocean Quahog FMP, there are many other FMPs and associated fishery management actions for other species that have impacted these VECs over the temporal scale described in section 7.3.3. These include FMPs managed by the Mid-Atlantic Fishery Management Council, New England Fishery Management Council, Atlantic States Marine Fisheries Commission, and to a lesser extent the South Atlantic Fishery Management Council. Omnibus amendments are also frequently developed to amend multiple FMPs at once. Actions associated with other FMPs and omnibus amendments have included measures to regulate fishing effort for other species, measures to protect habitat and forage species, and fishery monitoring and reporting requirements.

As with the surfclam and ocean quahog actions described above, other FMP actions developed by Fishery Management Councils or GARFO have been developed in compliance with the MSA and have had positive long-term cumulative impacts on managed and non-target species, habitat, and protected resources because they constrain fishing effort and manage stocks at sustainable levels. However, constraining fishing effort through regulatory actions can have negative short-term

socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Non-Fishing Impacts

Other Human Activities

Non-fishing activities that introduce chemical pollutants, sewage, or suspended sediment into the marine environment or result in changes in water temperature, salinity, or dissolved oxygen, pose a risk to all VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging, and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and as such may indirectly constrain the sustainability of managed species, non-target species, and protected species. Decreased habitat suitability tends to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that reduce fishing effort could negatively impact human communities. The overall impact on the affected species and their habitats on a population level is unknown, but likely to range from no impact to low negative, depending on the population, since a large portion of these populations have a limited or minor exposure to these local non-fishing perturbations.

Non-fishing activities permitted under other Federal agencies (e.g., beach nourishment, offshore wind facilities, etc.) require examinations of potential impacts on the VECs. The MSA imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH (50 CFR §600.930). The eight regional fishery management councils engage in this review process by making comments and recommendations on federal or state actions that may affect habitat for their managed species and by commenting on actions likely to substantially affect habitat.

In addition to the activities above, in recent years, offshore wind energy and oil and gas exploration have become more relevant activities in the Greater Atlantic region that are expected to impact all VECs, as described below. For potential biological impacts of wind, the turbines and cables may influence water currents and electromagnetic fields, respectively, which can affect patterns of movement for various species (target, non-target, protected). Habitats directly at the turbine and cable sites would be affected, and there could be scouring concerns around turbines. Impacts on human communities in a general sense will be mixed – there will be economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generated using fossil fuels with renewable sources. But there may be negative effects on fishing activities in terms of effort displacement, or making fishing more difficult or expensive near the turbines or cables.

For oil and gas, this timeframe would include leasing and possible surveys. Seismic surveys impact the acoustic environment within which marine species live, and have uncertain effects on fish behaviors that could cumulatively lead to negative population level impacts. The science on this

is fairly uncertain. If marine resources are affected by seismic, then so in turn the fishermen targeting these resources would be affected. However, there would be an economic component in the form of increased jobs where there may be some positive effects on human communities.

While there are currently no operational wind farms in Mid-Atlantic waters, potential offshore wind energy sites have been identified off of Virginia, Maryland, New Jersey, Delaware, and New York, and there are several proposals to develop wind farms in both nearshore and offshore waters. In New England, offshore wind project construction south of Massachusetts/Rhode Island may begin as early as 2019 (three projects including Vineyard Wind, Bay State Wind, and South Fork Wind Farm). Additional areas have been leased and will have site assessment activities in the next few years. These projects could have low negative impacts on EFH, as well as surfclam and ocean quahog, non-target species, and fishing communities if there are any negative impacts on those resources. Furthermore, there could be negative impacts on protected species of birds and marine mammals if they interact with the wind farms.

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats on a population level is unknown, but likely to range from no impact to moderate negative, depending on the number and locations of projects that occur, as well as the effects of mitigation efforts.

Global Climate Change

Global climate change affects all components of marine ecosystems, including human communities. Physical changes that are occurring and will continue to occur to these systems include sea-level rise, changes in sediment deposition; changes in ocean circulation; increased frequency, intensity and duration of extreme climate events; changing ocean chemistry, and warming ocean temperatures. Emerging evidence demonstrates that these physical changes are resulting in direct and indirect ecological responses within marine ecosystems which may alter the fundamental production characteristics of marine systems (Stenseth et al. 2002). Climate change will potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors.

Results from the Northeast Fisheries Climate Vulnerability Assessment indicate that climate change could have impacts on Council-managed species that range from negative to positive, depending on the adaptability of each species to the changing environment (Hare et al. 2016).[55] Based on this assessment, surfclam was determined to have a high overall vulnerability to climate change. The exposure of surfclam to the effects of climate change was determined to be “high” due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All surfclam life stages use marine habitats. Surfclam spawning occurs in summer and early fall in warm water, starting earlier inshore than offshore. Surfclam eggs hatch into a trochophore larvae within 1-2 days of fertilization. Larvae cannot survive high temperatures. Juveniles and adults occur in coastal waters up to 66 m. The distributional vulnerability of surfclam was ranked as "high," as surfclam mortality is higher at higher

[55] Climate vulnerability profiles for individual species are available at: https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index

temperatures. Surfclam was determined to have a “high” biological sensitivity to climate change as they form calcium carbonate shell and adults are sessile.

This assessment determined ocean quahog had a very high overall vulnerability to climate change. Similar to surfclam, the exposure of ocean quahog to the effects of climate change was determined to be “high” due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All ocean quahog life stages use marine habitats. Ocean quahog is a cold-water, long-lived bivalve. Ocean quahog broadcast spawn over a protracted season and planktonic eggs mature into free-swimming trochophore, the pediveliger stage, swims, but also has a foot for burrowing. Temperatures affect growth rate. Juveniles occur in offshore sandy substrates and adults occur in dense beds over level bottom just below the surface sediments in medium to fine grain sand. Ocean quahogs usually occur at depts between 25-61 m and temperature regulates the cross-shelf distribution. Also similar to surfclam, the distributional vulnerability was ranked as “high” as growth slows at higher temperatures. Ocean quahog was determined to have a “very high” biological sensitivity to climate due to population growth rate, sensitivity to ocean acidification, adult mobility, slow growth, from calcium carbonate shell, and adults are sessile (Hare et al. 2016).

Overall, climate change is expected to have impacts that range from positive to negative depending on the species. For surfclams and ocean quahogs climate change impacts are high. However, future mitigation and adaptation strategies to climate change may mitigate some of these impacts. The science of predicting, evaluating, monitoring and categorizing these changes continues to evolve.

Table 22. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr **Original Surfclam and Ocean Quahog FMP and subsequent FMP Amendments and Frameworks**	Established management measures	**Indirect Positive** Regulatory tool available to rebuild and manage stocks	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Benefited domestic businesses
P, Pr **Surfclam and Ocean Quahog Specifications**	Establish quotas, other fishery regulations	**Indirect Positive** Regulatory tool to specify catch limits, and other regulation; allows response to annual stock updates	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Benefited domestic businesses
P, Pr, RFF **Developed, Applied, and Redo of Standardized Bycatch Reporting Methodology**	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	**No Impact** May improve data quality for monitoring total removals of managed resource	**No Impact** May improve data quality for monitoring removals of non-target species	**No Impact** Will not affect distribution of effort	**No Impact** May increase observer coverage and will not affect distribution of effort	**Potentially Indirect Negative** May impose an inconvenience on vessel operations
P, Pr, RFF **Other FMPs and Omnibus Actions**	Regulating fishing effort in other FMPs, habitat and forage species protection, industry monitoring and reporting	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Indirect Positive** Reduced fishing effort, implemented gear requirements	**Indirect Positive** Regulated fishing effort, implemented gear requirements	**Mixed** Benefited some domestic businesses; negative impacts on some participants due to limited access and constraints on landings and revenues
P, Pr, RFF **PSP Closed Areas**	Reopening of PSP Closed Areas to Clam fishing	**No Impact to Indirect Negative** Fishery impacts in previously unfished areas	**Indirect Positive** Reduced overall fishing effort	**Indirect Positive** Reduced overall fishing effort	**No Impact** Limited interactions with gear occur	**Indirect Positive** Benefitted domestic businesses

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Agricultural runoff**	Nutrients applied to agricultural land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource
P, Pr, RFF **Climate change**	Wide-ranging impacts including changes in ocean chemistry, temperatures, sea-level, and ocean circulation; increased frequency, intensity, and duration of extreme climate events.	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Decreased habitat quality, suitability and/or availability for some species; increased quality/suitability/availability for others	**Negative to positive** Depending on impacts to habitat and prey availability	**Negative to positive** Depending on resiliency of individual communities and mitigation/adaptation
P, Pr, RFF **Port maintenance**	Dredging of coastal, port and harbor areas for port maintenance	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
P, Pr, RFF **Offshore disposal of dredged materials**	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability
P, Pr, RFF **Beach nourishment**	Offshore mining of sand for beaches	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for mining companies, possibly negative for fishing industry
	Placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Positive** Beachgoers like sand; positive for tourism

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Marine transportation**	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for some interests, potential displacement for others
P, Pr, RFF **Renewable and Non-renewable Offshore and Nearshore Energy Development**	Transportation of oil, gas, and electric through pipelines and cables; Construction of oil platforms, wind facilities, liquefied natural gas facilities; Additional port development infrastructure	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Reduced habitat quality; offshore platforms may benefit structure oriented fish species habitat	**Potentially Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
Pr, RFF **Implementation of Data Collection Protocol**	Collect data needed to track ITQ share ownership within the fishery	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**Uncertain – Likely Mixed** Collects data needed to evaluate excessive shares cap, but additional paperwork may be required
RFF **Amendment to address Excessive Shares (within 3 years)**	Establish a cap for excessive share accumulation	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**No Impact** Administrative - no direct or indirect impacts	**Indirect Positive** Protects against excessive share accumulation in fishery

Table 22 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this Amendment document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
RFF **Omnibus EFH Amendment 2 (NEFMC) and Clam Access Frameworks**	Revises essential fish habitat and habitat area of particular concern designations, revises or creates habitat management areas, including gear restrictions	**Indirect Positive** Improve habitat quality	**Indirect Positive** Improve habitat quality	**Indirect Positive** Improve habitat quality	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues
RFF **Convening of Take Reduction Teams (periodically)**	Recommend measures to reduce mortality and injury to marine mammals	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

7.5.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section describes the expected effects of these actions on each VEC.

7.5.5.1 Magnitude and Significance of Cumulative Effects on Managed Species and Non-Target Species

Those past, present, and reasonably foreseeable future actions which may impact target species (surfclam and ocean quahog) and non-target species, and the direction of those potential impacts, are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore and marine areas where the projects occur; therefore, the magnitude of those impacts on the managed resources is expected to be limited due to limited exposure to the populations at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on productivity of the managed resources is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and the annual specifications process have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions described in Table 22 will have additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect the ecosystem services on the productivity of managed species depends. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the managed resources have had positive cumulative effects.

Catch limits, commercial quotas and recreational harvest limits for each of the managed species have been specified to ensure that these rebuilt stocks are managed sustainably and that measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from specification of management measures are largely dependent on how effective those measures are in meeting the objectives of preventing overfishing and achieving optimum yield, and on the extent to which mitigating measures are effective. The proposed actions described in this document would positively reinforce the past and anticipated positive cumulative effects on the managed resources by achieving the objectives specified in the respective FMP and ensuring the requirements of the MSA are met. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (Table 22).

7.5.5.2 Magnitude and Significance of Cumulative Effects on Physical Environment

Those past, present, and reasonably foreseeable future actions which may impact the physical environment and habitat (including EFH), and the direction of those potential impacts, are summarized in Table 22. The direct and indirect negative actions described in Table 22 are localized in nearshore and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to limited exposure of habitat at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on habitat is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by species under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and annual specifications process have had positive cumulative effects on habitat. The actions have constrained fishing effort both at a large scale and locally and have implemented gear requirements which may reduce impacts on habitat. As required under these FMP actions, EFH and Habitat Areas of Particular Concern were designated for the managed resources. It is anticipated that the future management actions described in Table 22 will result in additional direct or indirect positive effects on habitat through actions which protect EFH and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All the VECs are interrelated; therefore, the linkages among habitat quality, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and will likely continue to be, taken to improve the condition of habitat. Some actions, such as coastal population growth and climate change may indirectly impact habitat and ecosystem productivity; however, these actions are beyond the scope of NMFS and Council management. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had neutral to positive cumulative effects.

The proposed actions described in this document are largely administrative in nature and would not significantly change the past and anticipated cumulative effects on habitat and thus would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (Table 22).

7.5.5.3 Magnitude and Significance of Cumulative Effects on Protected Species

Those past, present, and reasonably foreseeable future actions which may impact protected species, and the direction of those impacts, are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore and marine project areas where they occur. Therefore, the magnitude of those impacts on protected species is expected to be limited due to limited exposure of the populations at large. Agricultural runoff may be much broader in scope

and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on protected species is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact protected species prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected species under NMFS' jurisdiction.

Given their life history dynamics, large changes in protected species abundance over long time periods, and the multiple and wide-ranging fisheries management actions that have occurred, the cumulative impacts on protected species were evaluated over a long-time frame (i.e., from the 1970's through the present). While some protected species are doing better than others, overall the trend of stock condition for protected resources has improved over the long-term due to reductions in the number of interactions. Past fishery management actions taken through the respective FMPs and annual specifications process have contributed to this long-term trend toward positive cumulative effect on protected species through the reduction of fishing effort (and thus reduction in potential interactions) and implementation of gear requirements. It is anticipated that future management actions, described in Table 22, will result in additional indirect positive effects on protected species. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected species have had a positive cumulative effect.

The proposed actions described in this document are largely administrative in nature and would not change the past and anticipated cumulative effects on protected species and thus would not have any significant effect on protected species individually or in conjunction with other anthropogenic activities (Table 22). Overall, actions have had, or will have, positive impacts on protected species.

7.5.5.4 Magnitude and Significance of Cumulative Effects on Human Communities

Those past, present, and reasonably foreseeable future actions which may impact human communities and the direction of those potential impacts are summarized in Table 22. The indirectly negative actions described in Table 22 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. Those actions may displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal ecosystem may larger in magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the respective FMPs and annual specifications process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices while also sometimes reducing the availability

of the resource to fishery participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions described in Table 22 will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur if management actions result in reduced revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had overall positive cumulative effects.

Catch limits and commercial quotas for each of the managed species have been specified to ensure that these rebuilt stocks are managed in a sustainable manner and that management measures are consistent with the objectives of the FMPs under the guidance of the MSA. The impacts from annual specification of management measures on the managed species are largely dependent on how effective those measures are in meeting their intended objectives and the extent to which mitigating measures are effective.

Despite the potential for negative short-term effects on human communities, positive long-term effects are expected due to the long-term sustainability of the managed stocks. Overall, the proposed actions described in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (Table 22).

7.5.6 Preferred Action on all the VECs

[This section will be completed prior to submission to the NMFS]

8.0 APPLICABLE LAWS

8.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

8.1.1 National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The most recent FMP amendments describe how the management actions implemented comply with the National Standards. The Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield (OY) for Atlantic surfclam and ocean quahogs and the U.S. fishing industry.

To achieve OY, both scientific and management uncertainty need to be addressed when establishing catch limits that are less than the Overfishing Limit (OFL); therefore, the Council develops recommendations that do not exceed the ABC recommendations of the SSC which have been developed to explicitly address scientific uncertainty. In addition, the Council has considered relevant sources of management uncertainty and other social, economic, and ecological factors, which resulted in recommendations for annual catch targets for both managed resources. The Council uses the best scientific information available (National Standard 2) and manages both species throughout their range (National Standard 3). These management measures do not discriminate among residents of different states (National Standard 4), they do not have economic allocation as their sole purpose (National Standard 5), the measures account for variations in these fisheries (National Standard 6), they avoid unnecessary duplication (National Standard 7), they take into account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). Finally, actions taken are consistent with National Standard 9, which addresses bycatch in fisheries. The Council has implemented many regulations that have indirectly acted to reduce fishing gear impacts on EFH. By continuing to meet the National Standards requirements of the MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will ensure that cumulative impacts of these actions will remain positive overall for the ports and communities that depend on these fisheries, the Nation as a whole, and certainly for the resources.

8.2 NEPA FINDING OF NO SIGNIFICANT IMPACT (FONSI)

[This section will be completed prior to submission to the NMFS]

The CEQ Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR §1508.27). In addition, the Companion Manual for NOAA Administrative Order 216-6A provides sixteen criteria (the same ten as the CEQ Regulations and six additional) for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

16. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting EA, it is hereby determined that the proposed actions in this document will not significantly impact the quality of the human environment as described above and in the EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

_____ _____

Regional Administrator for GARFO, NMFS, NOAA *Date*

8.3 Endangered Species Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on ESA-listed and MMPA protected resources. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on these fisheries.

8.4 Marine Mammal Protection Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on marine mammals protected under the MMPA. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect marine mammals or critical habitat in any manner not considered in previous consultations on the fisheries. A final determination of consistency with MMPA will be made by the agency during the rulemaking process.

8.5 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council has developed this amendment document and will submit it to NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through Virginia).

8.6 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of an FMP and subsequent amendments and framework adjustments. Development of this amendment document provided many opportunities for public review, input, and access to the rulemaking process. This action and the proposed measures were developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to comment during the public scoping period (from June 23, 2017 to July 21, 2017). The public also had the opportunity to review and comment on management measures/goals and objectives during the Council meeting in October 2017, June 2018, April 2017, and June 2019. FMAT meetings and advisory panel meetings were also open to the public. Public hearings will be held and provide addition opportunity for comment from the public, prior to the Council's decision to submit the document to NMFS. In addition, the public will have further opportunity to comment on this amendment document when NMFS publishes a request for comments notice in the Federal Register.

8.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes measures for setting measures to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges. This action would also revise the process for specifying multi-year management measures, require periodic review of the excessive shares cap level, and allow adjustments to the made under the frameworkable provisions of the FMP. In addition, this amendment considers revisions to some or all of the current management objectives for the Atlantic Surfclam and Ocean Quahog FMP. This document includes: A description of the alternatives considered, the preferred action and rationale for selection, and any changes to the implementing regulations of the FMP (if applicable). As such, this document enables the implementing agency (NMFS) to make a decision on implementation and this document serves as a supporting document for the proposed rule.

The action contained within this amendment document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during a number of public meetings (see section 8.6). In addition, the public will have further opportunity to comment on this amendment document once NMFS publishes a request for comments notice in the Federal Register.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g., Confidentiality of Statistics of the MSA; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR §229.11, Confidentiality of information collected under the Marine Mammal Protection Act).

Objectivity of Information Product

The category of information product that applies here is "Natural Resource Plans." Section 8.0 describes how this document was developed to be consistent with any applicable laws, including MSA with any of the applicable National Standards. The analyses used to develop the alternatives (i.e., policy choices) are based upon the best scientific information available. The most up to date information was used to develop the EA which evaluates the impacts of those alternatives (see section 7.0). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the surfclam and ocean quahog fisheries.

The review process for this amendment document involves MAFMC, NEFSC, GARFO, and NMFS headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and non-economic social sciences. The MAFMC review process involves public meetings at which affected stakeholders have the opportunity to comments on proposed management measures. Review by GARFO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, and compliance with the applicable laws. Final approval of the amendment document and clearance of the rule is conducted by staff at NMFS Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.8 Paperwork Reduction Act

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

8.9 Impacts of the Plan Relative to Federalism/EO 13132

This document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

8.10 Regulatory Impact Review / Initial Regulatory Flexibility Analysis

[This section will be completed prior to submission to the NMFS].

During the public hearings for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, we are seeking industry and public input in categorizing current allocation holders by matching allocation holders using the industries described in the North American Industry Classification System Codes (NAICS) for the purpose of conduction the Regulatory Flexibility Analysis (RFA).

The NAICS codes are used to categorize businesses by industry description (e.g., commercial harvester, processor, bank, for-hire vessel). As an example, the SBA defines a small business in the commercial fishing industry as a firm with total annual receipts (gross revenues) not in excess of $11.0 million. A small business in the recreational for-hire fishery is a firm with receipts of up to $7.5 million.

The FMAT used the Small Business Administration table of Small Business Size Standards matched to the NAICS Codes to categorize current surfclam and ocean quahog allocations holders (See Tables X and Y below) and seeks industry and public input on the categorizations made or any missing information. This data will be used when finalizing the analysis in this section once the Council selects the prefer alternative.

The NMFS requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new FMP or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses many items in the regulatory philosophy and principles of EO 12866.

The Regulatory Flexibility Act (RFA) requires the Federal rulemaker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. In reviewing the potential impacts of proposed regulations, the agency must either certify that the rule "will not, if promulgated, have a significant economic impact on a substantial number of small entities." As indicated in section 5.0, the proposed actions in this document would implement measures to ensure that no individual, corporation, or other entity acquires an excessive share of the Atlantic surfclam and ocean quahog ITQ privileges, measures that facilitate for the periodic review of implemented excessive cap level, measures that facilitate revisions to the process for specifying multi-year management measures, and measures that allow modifications to the excessive shares cap level via framework actions. An Initial Regulatory Flexibility Analysis (IRFA) will be prepared to further evaluate the economic impacts of the various alternatives presented once the Council has identified preferred alternatives. This analysis supports a more thorough analysis (RFA Analysis) which will be completed.

Table X. SBA classification for 2017 ocean quahog allocation owners of record.

SBA Code	Size Standard in Millions	SBA Classification	Alloc. #	Owner of Record	Street	City	State
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q667	Bumble Bee Foods LLC c/o Gabriel Montesano	280 10th Ave	San Diego	CA
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q649	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	Q664	TD Bank NA Attn: David Nilsen, Sr. Vice President	1101 Hooper Ave	Toms River	NJ
522110	$550 million in assets	Commercial Banking	Q691	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
522130	$550 million in assets	Credit Unions	Q690	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ
?	?	?	Q684	ITQ LLC	PO Box 727	Manahawkin	NJ
?	?	?	Q199	Legend Inc	607 Seashore Rd	Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q112	Wando River Corporation c/o Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
114113	$11 million in revenues	Commercial fishing	Q194	John Kelleher C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
114113	$11 million in revenues	Commercial fishing	Q021	Atlantic Vessels of Delaware Inc	PO Box 178	Norfolk	VA

114113	$11 million in revenues	Commercial fishing	Q055	Kristy Lee Clam Co	PO Box 114	Newcomb	NY
114113	$11 million in revenues	Commercial fishing	Q629	LET Ventures Incorporated (Ellen W LLC)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q006	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
114113	$11 million in revenues	Commercial fishing	Q576	Foxy Investments Inc C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	Q609	M J Holding Co LLC	PO Box 114	Newcomb	NY
114113	$11 million in revenues	Commercial fishing	Q596	Atlantic Vessels Inc	PO Box 178	Norfolk	VA
114113	$11 million in revenues	Commercial fishing	Q115	LET Ventures Incorporated (Patti B Clam Ventures Inc)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q181	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
?	?	?	Q672	OSM Resources LLC	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q598	John W Kelleher Trust C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
?	?	?	Q676	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL

114113	$11 million in revenues	Commercial fishing	Q005	LET Ventures Incorporated (A & B Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q049	LET Ventures Incorporated (Sarah C Conway Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q128	LET Ventures Incorporated (F/V Ocean View Inc)	PO Box 727	Manahawkin	NJ
114113?	$11 million in revenues?	Commercial fishing?	Q109	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD
114113	$11 million in revenues	Commercial fishing	Q101	T & M Clammers Inc	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q193	Peter A LaMonica C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
?	?	?	Q107	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q174	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	Q084	LET Ventures Incorporated (B&B Shellfishing Inc)	PO Box 727	Manahawkin	NJ
?	?	?	Q685	NSR Resources LLC	PO Box 727	Manahawkin	NJ
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	Q016	George S Carmines In Trust	103 Rens Rd	Poquoson	VA
?	?	?	Q003	Adriatic Inc	10127 Keyser Point Road	Ocean City	MD

?	?	?	Q669	Kenneth W Bailey	PO Box 12	Heislerville	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	Q658	DC Air & Seafood Inc	PO Box 581	Winter Harbor	ME
?	?	?	Q056	Seafish Inc	10134 Waterview Dr	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	Q143	Shellfish Inc	PO Box 86	West Sayville	NY

Table Y. SBA classification for 2017 surfclam allocation owners of record.

SBA Code	Size Standard in Millions	SBA Classification	Alloc. #	Owner of Record	Street	City	State
?	?	?	C624	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
424460	100 employees	Fish and Seafood Merchant Wholesalers	C583	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	C632	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
522130	$550 million in assets	Credit Unions	C529	Farm Credit East, ACA Attn: Benjamin Thompson	240 South Rd	Enfield	CT
NA	Public Administration: Small business size standards are not established for this Sector. Establishments in the Public Administration Sector are Federal, state, and local government agencies which administer	Sector 92	C669	US DOC NOAA/NMFS Financial Services Division	55 Great Republic Dr	Gloucester	MA
NA		Sector 92	C666	US DOC NOAA/NMFS Financial Services Division ITF Michael and Danny NOAA ITQs	55 Great Republic Dr	Gloucester	MA

	and oversee government programs and activities that are not performed by private establishments.			Attn: James Plouffe			
?	?	?	C136	Stephanie Dee Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL
522110	$550 million in assets	Commercial Banking	C660	First Niagara Bank NA ITF DPL Niagara Enterprises LLC Attn: Terri Kratz	401 Plymouth Rd Ste 600	Plymouth Meeting	PA
114113?	$11 million in revenues?	Commercial fishing?	C009	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C188	Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
522110	$550 million in assets	Commercial Banking	C634	Tristate Capital Bank Attn: Loan Operations	301 Grant St Ste 2700	Pittsburgh	PA
114113	$11 million in revenues	Commercial fishing	C074	Kristy Lee Clam Co	PO Box 114	Newcomb	NY
522130	$550 million in assets	Credit Unions	C546	Farm Credit East, ACA FBO JM & MT Attn: Benjamin Thompson	240 South Rd	Enfield	CT
114113	$11 million in revenues	Commercial fishing	C589	Yannis Karavia LLC C/O 20 Fathom LLC	PO Box 600	Dorchester	NJ
522130	$550 million in assets	Credit Unions	C627	Farm Credit East, ACA Attn: Scott Kenney	240 South Rd	Enfield	CT
424460	100 employees	Fish and Seafood Merchant Wholesalers	C540	George Torggler	921 Preserve Dr	Annapolis	MD
522130	$550 million in assets	Credit Unions	C662	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ

424460	100 employees	Fish and Seafood Merchant Wholesalers	C663	DPL ITQs LLC	PO Box 309	Millville	NJ
114113	$11 million in revenues	Commercial fishing	C528	LNA Inc	PO Box 178	Portsmouth	RI
114113?	$11 million in revenues?	Commercial fishing?	C146	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	C026	George S Carmines In Trust	103 Rens Rd	Poquoson	VA
522130	$550 million in assets	Credit Unions	C547	Farm Credit East, ACA FBO LET Attn: Benjamin Thompson	240 South Rd	Enfield	CT
?	?	?	C004	Adriatic Inc	10127 Keyser Point Road	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C642	CCCFA Inc Attn: Seth Rolbein	1566 Main St	Chatham	MA
114113	$11 million in revenues	Commercial fishing	C563	LET Ventures Incorporated (Ellen W LLC)	PO Box 727	Manahawkin	NJ
NA	Public Administration: Small business size standards are not established for this Sector. Establishments in the Public Administration Sector are Federal, state, and local government agencies which administer and oversee government programs and activities that are not performed by private establishments.	Sector 92	C674	US DOC NOAA/NMFS Financial Services Division ITF LaVecchia and LaVecchia LLC Attn: James Plouffe	55 Great Republic Dr	Gloucester	MA
114113	$11 million in revenues	Commercial fishing	C110	LET Ventures Incorporated (F/V Ocean Bird Inc)	PO Box 727	Manahawkin	NJ

?	?	?	C133	City of Southport Inc	854 Tern Ln Apt 103	Salisbury	MD
523991	$38.5 million in revenues	Trust, Fiduciary and Custody Activities	C552	M J Holding Co LLC	PO Box 114	Newcomb	NY
?	?	?	C664	Faye Y Watson	10222 Golf Course Rd	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C065	LET Ventures Incorporated (Sarah C Conway Inc)	PO Box 727	Manahawkin	NJ
?	?	?	C166	Nantucket Shoals Inc Attn: Albert C Rosinha Jr	147 Pine St	Rochester	MA
522110	$550 million in assets	Commercial Banking	C559	Sturdy Savings Bank (P & E) Attn: Commercial Loans	PO Box 900	Cape May Court House	NJ
522110	$550 million in assets	Commercial Banking	C655	Audubon Savings Bank ITF Cape Cod of Maryland Inc Attn: Letitia C. Baum, Senior Vice President	515 S White Horse Pike	Audubon	NJ
114113	$11 million in revenues	Commercial fishing	C007	LET Ventures Incorporated (A & B Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C046	LET Ventures Incorporated (B & D Commercial Fish Inc)	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C215	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ
?	?	?	C189	Anthony W Watson	10232 Golf Course Rd	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C151	LET Ventures Incorporated	PO Box 727	Manahawkin	NJ

				(Patti B Clam Ventures Inc)			
?	?	?	C080	TMT Allocations Inc (Leprechaun Inc)	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C454	LET Ventures Incorporated (Leroy E Truex)	PO Box 727	Manahawkin	NJ
?	?	?	C584	Mabel Susan III Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C099	Mabel Kim Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C033	Big Diamond Inc	12 Rabbit Run	Cape May	NJ
?	?	?	C201	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD
114113	$11 million in revenues	Commercial fishing	C561	Roy Osmundsen	14 Whippoorwill Ln	Cape May Court House	NJ
114113	$11 million in revenues	Commercial fishing	C134	LET Ventures Incorporated (Starlight Comm Fish Inc)	PO Box 727	Manahawkin	NJ
?	?	?	C8270	Jacek Kubiak	8 Cove Dr	North Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C149	Wando River Corporation c/o Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA
424460	100 employees	Fish and Seafood Merchant Wholesalers	C568	Daniel M Cohen	985 Ocean Dr	Cape May	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C515	Dolores Truex	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C127	Gary Osmundsen	12 Rabbit Run	Cape May	NJ
114113	$11 million in revenues	Commercial fishing	C135	T & M Clammers Inc	PO Box 727	Manahawkin	NJ
114113	$11 million in revenues	Commercial fishing	C079	Lauren Kim Inc	12 Rabbit Run	Cape May	NJ

522130	$550 million in assets	Credit Unions	C656	Farm Credit East, ACA Attn: David A Bishop	2 Constitution Dr	Bedford	NH
?	?	?	C560	Mary Patricia Price	540 Hidden Pines Blvd	New Smyrna Beach	FL
?	?	?	C613	NSR Resources LLC	PO Box 727	Manahawkin	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C638	Vongole Ragazzi LLC	48 Gorton Rd	Millville	NJ
?	?	?	C229	Kenneth W and Sharon L Bailey	PO Box 12	Heislerville	NJ
114112	$11 million in revenues	Commercial fishing	C008	LET Ventures Incorporated (F/V Amanda Tara Inc)	PO Box 727	Manahawkin	NJ
522130	$550 million in assets	Credit Unions	C661	Farm Credit East, ACA ITF Surfside Clam Resources LLC	29 Landis Ave	Bridgeton	NJ
114113	$11 million in revenues	Commercial fishing	C071	Wyoming Boat Corporation	12 Rabbit Run	Cape May	NJ
?	?	?	C075	Seafish Inc	10134 Waterview Dr	Ocean City	MD
114113	$11 million in revenues	Commercial fishing	C063	T & P Vessel Inc	210 Hagen Rd	Cape May Court House	NJ
424460	100 employees	Fish and Seafood Merchant Wholesalers	C629	New Sea Rover Inc ITF Blount Seafood Corporation	114 Willow Dr	Cape May	NJ
114112	$11 million in revenues	Commercial fishing	C637	F/V Maude Platt Inc	515 Sanford Rd	Westport	MA
114113	$11 million in revenues	Commercial fishing	C011	D & L Commercial Fish Inc	PO Box 727	Manahawkin	NJ

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10.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this document, the Council consulted with NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. To ensure compliance with NMFS formatting requirements, the advice of NMFS GARFO personnel was sought.

Copies of this document are available from Dr. Christopher M. Moore, Executive Director,
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Appendix A

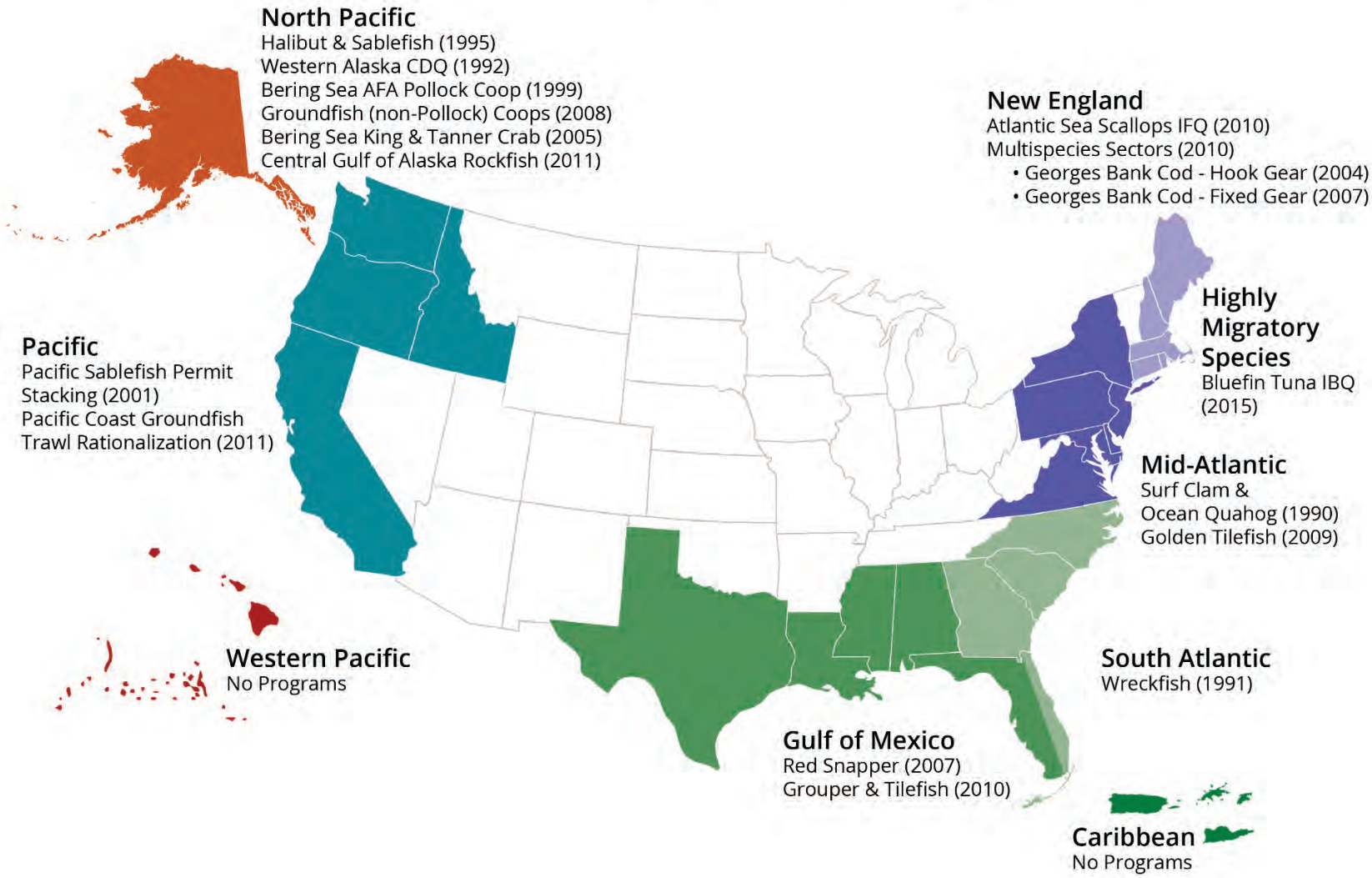
Catch Shares programs in the USA

"Catch shares" is a general term associated with several fisheries management strategies that dedicate a secure share of fish to individual fishermen, cooperatives, or fishing communities for their exclusive use. This appendix presents information on the geographic distribution of the 16 Catch Shares Programs throughout the country. In addition, this appendix provides a brief summary of how these programs are managed.[56]

The information presented below was provided by Lindsay Fullenkamp (NOAA) and Wendy Morrison (NOAA).

[56] For additional information please visit: https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares.

Current Catch Shares Programs



Program	Excessive Share Cap
Atlantic Sea Scallops IFQ	Yes. 2.5% of annual quota pounds[57]; 5% cap on quota share[58]
Multispecies Sectors	Yes. No individual or entity can hold more than 5% of all limited access groundfish permits. Additionally, there is a limit on the aggregated average of all allocated groundfish stocks of 15.5 Potential Sector Contribution (PSC). (Each permit has a history that brings a percentage of quota to the sector the permit enrolls with.) An entity can hold PSC for a single stock in excess of 15.5%, so long as the total holdings do not exceed 232.5 PSC for all 15 species. In other words, because there are 15 groundfish stocks currently allocated to the fishery, the total PSC across all stocks used by a permit holder cannot exceed 232.5 PSC (an average PSC of 15.5% per stock multiplied by 15 groundfish stocks).
Bluefin Tuna IBQ	No. The IBQ program is designed to account for bycatch in directed pelagic longline fisheries. There are various measures in place to curtail the excessive accumulation of share or allocation, such as no permanent sales and all leases contained within the calendar year.
Surf Clam & Ocean Quahog	No
Golden Tilefish	Yes, 49% of the tilefish IFQ total allowable landings
Wreckfish	Yes, 49% of quota share
Red Snapper	Yes, 6% of quota share
Grouper & Tilefish	Yes, quota share caps are: deep water grouper 14.7%, gag 2.3%, other shallow water grouper 7.3%, red grouper 4.3%, and tilefish 12.2%
Pacific Sablefish Permit Stacking	Yes, no individual can hold more than three permits unless meet requirements of grandfather clause.
Pacific Coast Groundfish Trawl Rationalization	Yes For IFQ, quota share limits and quota pound vessel limits (annual and daily). Limits vary by species. The 30+ categories can be found here: http://www.westcoast.fisheries.noaa.gov/publications/fishery_management/trawl_program/accumulation-limits.pdf. For the mothership cooperative program, mothership permit usage limit (no more than 45% of sector allocation). Mothership catcher vessel endorsed permit ownership limit (no more than 20% of the sector allocation).

[57] Quota pounds is the annual amount of fish a participant is allowed to catch, usually defined in terms of total weight. It is often calculated as a percentage of the commercial quota based on a participant's quota shares. It varies according to changes in the commercial quota over time.

[58] Quota share is the percentage of the sector's catch limit to which the holder of quota shares has access to harvest. This percentage is used to calculate the annual allocation, and it is not affected by changes in the catch limit over time.

Halibut & Sablefish	Yes. No one can hold or control more than 0.5%-1.5% of the halibut or sablefish quota shares in various combinations of areas (Gulf of Alaska, Bering Sea, and Aleutians) unless grandfathered in based on original landings history. There are similar restrictions on the amounts of IFQ that can be used on any single vessel.
Western Alaska CDQ	No. The Bering Sea King and Tanner Crab and Halibut Sablefish IFQ have limits on CDQ holdings, but there are no specific excessive share limits in the CDQ Program itself because the allocations were specified by Congress. However, the percentage allocated is reviewed every 10 years.
Bering Sea AFA Pollock Coop	Yes. No entity can harvest more than 17.5% or process more than 30% of the pollock directed fishery allocation.
Groundfish (non-Pollock Coops)	Yes. No single person can hold or use more than 30% of the quota share, unless grandfathered; no single vessel may catch more than 20% of the initial TAC assigned to the non-AFA trawl catcher/processor sector in any given year.
Bering Sea King & Tanner Crab	Yes. No individual or entity may hold/use more than 1-20% of shares (varies by fishery) unless grandfathered. Processors may not possess or use more than 30% of the processor shares for each fishery unless grandfathered, with some limited exceptions for specific fisheries and entities.
Central Gulf of Alaska Rockfish	Yes. There are four types of use caps to limit the amount of rockfish quota share and cooperative fishing quota, unless grandfathered. The caps can be found in Table 1 here: https://alaskafisheries.noaa.gov/sites/default/files/rockfish-faq.pdf

Appendix B

Synthesis Document for

Review of Goals and Objectives for the Atlantic Surfclam and Ocean Quahog Fishery Management Plan

October 2017

Prepared by the Fisheries Leadership & Sustainability Forum

Contents

1 Context for revising goals and objectives

1.1 Project overview

The Council is reviewing and potentially revising goals and objectives for the Surfclam and Ocean Quahog (SCOQ) Fishery Management Plan (FMP) in support of the Council's 2014-2018 Strategic Plan and 2017 Implementation Plan, which identified reviewing and updating FMP goals and objectives as a priority. This initiative allows the Council to revisit and "refresh" FMP goals and objectives to ensure that they provide meaningful guidance and are consistent with today's fisheries and management context. The Council will follow a similar process to update goals and objectives for all FMPs.

The Council contracted with the Fisheries Leadership & Sustainability Forum (Fisheries Forum) to support this work by developing a process to support the Council's discussion. Between April and July 2017, Fisheries Forum staff conducted planning conversations with members of the Council's SCOQ Committee, SCOQ Advisory Panel (AP), and additional state agency representatives from states engaged in the fisheries. The Fisheries Forum also reviewed comments provided by the public during scoping hearings held in July 2017.

The Fisheries Forum synthesized this feedback to identify the major ideas and themes of discussion. The Council's Surfclam and Ocean Quahog Fishery Management Action Team (FMAT) reviewed this information and provided recommendations to help guide the Council's discussion. This document combines the Fisheries Forum's synthesis of feedback and the FMAT's recommendations. This information is intended to help frame and focus the Council's review of goals and objectives, and is not intended to be comprehensive of all ideas and perspectives.

The Council will discuss SCOQ FMP goals and objectives at the October 2017 Council meeting (October 10-12, 2017 in Riverhead, New York). At this time, the Council may adopt revisions to SCOQ FMP goals and objectives for inclusion in a public hearing document. The Council and public will have additional opportunities to provide input on this issue.

1.2 Original FMP objectives

The current FMP objectives were adopted in 1988 through Amendment 8 to the SCOQ FMP.

1. Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.
3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

1.3 Terms: Goals, objectives, and strategies

As part of the Council's discussion and review of goals and objectives, it will be important to consider the appropriate terminology.

- Goals are broad, big picture, and aspirational. They can help communicate high-level values and priorities for SCOQ management.
- Objectives are more specific and actionable. They can help describe important steps toward accomplishing goals.
- Strategies refer to specific processes, decision points, and actions the Council may take to achieve objectives and support goals.

Goals and objectives are appropriate for the Council's discussion; however, specific management strategies would be appropriate to discuss in the context of other Council actions and will not be part of this discussion. Appendix 2 includes additional examples to help demonstrate the difference between goals, objectives, and strategies.

The four current SCOQ FMP objectives are described in Amendment 8 as objectives and not goals. Other Council FMPs include a combination of goals and objectives. Appendix 3 includes goals and objectives from all Mid-Atlantic FMPs. The Council could choose to consider structuring guidance for the SCOQ FMP in terms of goals, objectives, or both. The FMAT's recommendation includes a set of five goal statements with optional objectives for the Council's consideration.

1.4 MAFMC Strategic Plan

The Council's review of SCOQ FMP goals and objectives supports the Council's Strategic Plan and the 2017 Implementation Plan. The Council's 2014-2018 Strategic Plan identifies reviewing and updating FMP goals and objectives as a priority:

Management Goal: Develop fishery management strategies that provide for productive, sustainable fisheries.

Objective 11: Evaluate the Council's fishery management plans

Strategy 11.2: Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable.

The Council's 2017 Implementation Plan has a list of proposed deliverables including "Review and revise FMP goals and objectives" for the SCOQ FMP.

1.5 Scoping questions

The following questions were included in the Council's July 2017 Scoping Guide for the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment to elicit feedback on SCOQ FMP goals and objectives. (The Excessive Shares Amendment will consider excessive shares and FMP goals and objectives as two separate issues.)

- Are the existing objectives appropriate for managing the surfclam and ocean quahog fisheries?

- Are there any objectives that appear outdated or do not reflect the way these fisheries are managed today? If so, how could they be updated?
- Is the intent of each objective clear? If not, how could they be reworded or clarified?
- Should any new goals and/or objectives be added?
- What else should the Council consider during the process of reviewing the objectives for the SCOQ FMP?

2 Feedback on goals and objectives

This section provides an overview of ideas and feedback to help inform the Council's review of SCOQ FMP goals and objectives. Contributors include members of the Council's SCOQ Committee and AP, additional state representatives from states engaged in the fisheries, and stakeholders who provided comments during the Council's July 2017 scoping hearings. Contributors commented briefly on the use of goals and objectives. Additional feedback focused on three themes: 1) relevance of the current objectives, 2) opportunities for revisions, and 3) other issues that may be pertinent to goals and objectives, including Council priorities and unique aspects of the surfclam and ocean quahog fisheries.

2.1 Use of goals and objectives

Managers and advisors who contributed to this project shared the following ideas related to the use of FMP goals and objectives. Most managers and advisors do not refer back to goals and objectives on a regular basis, if at all, but felt they have an important role in the FMP.

Purpose: Goals and objectives provide high level guidance or the "ground rules" for a fishery to ensure it is managed sustainably. Managers and advisors described goals and objectives as foundational to the FMP (e.g., the "blueprint", the "benchmark", the National Standards of the FMP) and the Council's message to the public and industry about how it intends to manage the SCOQ fisheries. Goals and objectives need to be long term and flexible to accommodate changing conditions.

Time horizon: Goals are meant to be long term; objectives are shorter term and a measure of the effectiveness of the set goals. Managers and advisors felt that goals and objectives need to be set for the long term to provide stability and allow the industry to make business decisions. Goals and objectives should also provide managers and the industry with short-term flexibility to address challenges and changing conditions. The appropriate time horizon for goals and objectives can also depend on the circumstances of a fishery and what is needed.

Audience: The intended audience for goals and objectives is a large group that includes the Council, NOAA Fisheries, industry, interested stakeholders, state agencies, non-governmental organizations, and consumers.

2.2 Relevance of the current objectives

Many contributors felt that the current FMP objectives continue to remain relevant and provide meaningful guidance despite significant changes in the surfclam and ocean quahog fisheries. Contributors shared the following reasons why they felt that the current objectives are relevant and appropriate in their current form.

Flexibility: Contributors felt that the objectives have remained relevant through significant biological changes to the SCOQ resources and regulatory changes to the fisheries. They described seeing changes including a shift in the center of biomass to the north, a decrease in fishing activity in the southern end of the range, encountering surfclams among ocean quahogs in deeper water, fleet consolidation after implementation of the Individual Transferable Quota (ITQ) system, and improvements to the science and research supporting management of the SCOQ resources. Contributors felt that the current objectives are sufficiently flexible to accommodate future changes.

Process and intent: Some contributors described their high regard for the wording and intent of the current set of objectives and the process that was originally followed to develop them, as well as their respect for the people who participated.

Performance: Contributors feel that management is working well, that the current objectives are being achieved, and that these objectives define one of the most successfully managed fisheries in the U.S. The objectives reflect the current social and economic circumstances of the fisheries and have minimized government and industry costs. In particular contributors noted that the stock is rebuilt, harvest rates are stable, management uncertainty is low, short-term economic dislocations have been minimized, and regulatory requirements are simplified. Some contributors also noted that safety has been improved.

Stability and consistency: Contributors feel that the current objectives and adoption of the ITQ program have allowed the industry to make efficient planning and business decisions.

Relationships and process: Contributors feel that the current objectives support an efficient and cooperative relationship between the Council, NOAA Fisheries, and industry.

Overall, contributors felt the fisheries are managed well and these original FMP objectives are still relevant. Some felt no changes or updates are necessary to the current objectives, while others felt a refresh and/or some minor wording updates could be helpful to modernize them.

2.3 Opportunities for revisions

Although contributors generally felt that the current SCOQ FMP objectives are still relevant, many suggested opportunities for revisions to ensure that objectives provide meaningful guidance, are clearly worded, and are consistent with the way the fisheries and the Council currently operate. These opportunities include minor wording adjustments as well as more comprehensive structural and content-related revisions.

2.3.1 Minor revisions

The following section describes opportunities identified by contributors for the Council to adjust, update, or clarify specific terms within each objective while preserving its intent. Contributors felt that objectives should be clearly worded to ensure that their intent is clear to managers, stakeholders, and enforcement.

Objective 1
Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.

- Update the objective: The Council could update this objective to reflect the need to maintain rather than “rebuild” the surfclam and ocean quahog resources, which are not overfished or undergoing overfishing. Many contributors felt “rebuild” is an outdated term and that refreshing this objective would acknowledge the progress made and that the SCOQ resources are sustainably managed.
- Clarify specific terms: Some felt it could be helpful to clarify some of the terms in this objective including “stabilizing” and “economic dislocations”. For example, harvest rates are stable and

the quota has been the same for years, so "stabilizing" may be a term that is more reflective of the fisheries in previous years.
- Other considerations: Some felt this objective could take the longevity of the species into consideration.

Objective 2

Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.

- Wording: This objective could acknowledge other relevant aspects of managing the fisheries, such as monitoring.
- Update the objective: Many felt management of the SCOQ fisheries is straightforward and simple, and that this objective might reflect a time when management was more complicated. The Council could update this objective, for example, to focus on maintaining current regulatory requirements.

Objective 3

Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.

- Update the objective: The current objective refers to "bringing harvest capacity into balance", however, contributors felt that harvesting capacity is in alignment with processing and biological capacity in the sustainable SCOQ fisheries. This portion of the objective could be updated to reflect the current fisheries and status of the resources.
- Clarify specific terms: Some weren't clear on the meaning of "economic efficiency" in this objective.

Objective 4

Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

- Clarify specific terms: Some contributors weren't sure what is meant by "unanticipated short term events" because there are not a lot of sudden changes in these fisheries and they are not aware of disruptions or destabilizing events that could occur in today's fisheries. However, some thought that changing environmental conditions could be considered an unanticipated event that could be reflected in this objective.

2.3.2 Structural and content revisions

In addition to the minor revisions above, some contributors felt that there are opportunities for the Council to make more significant structural and/or content-related revisions, ranging from minor to comprehensive changes to the existing objectives. (There may not be a clear delineation between "minor" and "significant" revisions, given that multiple minor revisions to one objective could result in substantial changes).

Order: The objectives could be ordered in terms of importance or priority.

Structure: Objectives could be combined or reorganized. For example, contributors noted that current objectives 3 and 4 both address industry operations.

Comprehensive revisions: The objectives could be completely revised. One example of a complete new set of goals and objectives was provided during the Council's July scoping hearings and is included as appendix to this document (Appendix 4: Example of revised goals and objectives provided by Bumble Bee Seafoods).

2.4 Other issues

The Council could consider how goals and objectives intersect with other Council priorities and unique aspects of the SCOQ resources and fisheries. Contributors identified several topics that are relevant to the SCOQ fisheries and could be relevant to a review of goals and objectives.

Ecosystem and habitat considerations: Implementation of the Council's Ecosystem Approach to Fisheries Management (EAFM) and effective use of the Essential Fish Habitat (EFH) authorities are Council priorities.

Climate and ecosystem changes: Some contributors are concerned about the impacts of ocean acidification to the long-lived, sessile surfclam and ocean quahog resources and feel that the fisheries need to remain adaptable to changing environmental conditions.

Scientific advances: Supporting advances in fishery-independent data collection and modeling that reflect the unique biology of surfclams and ocean quahogs helps to enhance the effective management of the SCOQ resources.

Changes to the fisheries: Contributors commented about the fisheries (both the biomass and fishing activity) shifting north into the geographical bounds of the New England Fishery Management Council and issues with accessible areas in New England due to the Omnibus Habitat Amendment.

Contributors noted other attributes of the fisheries that could be reflected in revised goals and objectives, including surfclams and ocean quahogs being a safe, high quality product. The longevity of the species is another unique attribute. Some also noted the importance of continuing to improve understanding of the resources, fisheries, and dependent communities, and the shared role of managers, industry, and science in the sustainable management of the SCOQ fisheries.

3 FMAT recommendation development

3.1 Context for FMAT recommendations

3.1.1 Outcomes from FMAT discussion

The Surfclam and Ocean Quahog FMAT convened via webinar on September 20, 2017, to consider the feedback obtained from planning conversations and scoping hearings, and to provide recommendations to help guide the Council's review of FMP goals and objectives. The FMAT recognizes that the Council will consider a range of possible options including:

- Making no changes to the current objectives
- Making minor changes or wording adjustments to the current objectives
- Making significant changes to the current objectives
- Developing a new set of revised objectives

The FMAT's discussion resulted in two outcomes to help support the Council's consideration of these options. The FMAT recommends that the Council discuss these two outcomes and determine how to proceed.

> Outcome 1: Discussion questions
> The FMAT developed a set of discussion questions (Section 3.2.1) to help guide the Council's discussion of SCOQ FMP goals and objectives and consideration of the options above.
>
> Outcome 2: Revised goals and objectives
> The FMAT recommended a set of goal statements and objectives (Section 3.2.2) for the Council's consideration of revised goals and/or objectives.

3.1.2 Rationale for FMAT recommendations

The FMAT developed Outcomes 1 and 2 after considering the guidance provided by the Council's 2014-2018 Strategic Plan (Section 1.4), the discussion questions used to elicit feedback from the public during the July 2017 scoping hearings (Section 1.5), and the feedback obtained from planning conversations and public comment (Section 2). The FMAT concluded that while the current SCOQ FMP objectives were carefully considered at the time they were developed, they should be revised to provide more useful guidance to the Council for the following reasons.

Acknowledge achievement and success. The current SCOQ FMP objectives reflect the intended and desired outcomes of Amendment 8. Aspects of these objectives have already been achieved. Revising FMP goals and objectives would acknowledge the improvements that have been made to the management of the SCOQ fisheries, recognize what is working well, and focus on maintaining and sustaining these improvements.

Clarify intent. Goals and objectives are an important public statement about what an FMP is trying to accomplish, and should be clear to stakeholders of all backgrounds. The current objectives and specific terms may not be clear to those who were not involved in the management process at the time

Amendment 8 was developed. Terms may also be confusing because they are not defined or have multiple definitions (e.g., economic efficiency). In addition, the current objectives are complicated and combine topics (e.g., Objective 1 addresses biology and economics). Revising goals and objectives would simplify and focus this guidance to clarify the Council's intent while still acknowledging the need to balance different objectives.

Provide flexible long-term guidance. The current SCOQ FMP objectives are short-term and focus on implementation of the ITQ program. Revising goals and objectives is an opportunity for the Council to develop broad, high-level guidance that describes the Council's longer-term intent for the fisheries, and is flexible to remain relevant over time and through changes to the fisheries.

Clearly identify FMP-level guidance. In addition to setting FMP goals and objectives, the Council may identify goals and/or objectives for specific amendments. For example, the Council identified objectives for Amendment 10 to the SCOQ FMP in 1998 (see Question 6 below). Furthermore, fisheries and FMPs evolve over time, and this can lead to a disconnect between the stated goals and/or objectives for an FMP and the way a fishery currently operates. Through the process of reviewing and revising FMP goals and objectives, the Council should clearly identify FMP-level guidance that is intended to carry forward through future Council actions, and ensure that this guidance reflects the current state of a fishery.

3.2 FMAT recommendations

3.2.1 Outcome 1: Discussion questions

The FMAT identified several discussion questions that may help inform the Council's consideration of goals and objectives for the SCOQ FMP.

Question 1: How does the Council want to structure guidance for the SCOQ FMP?
The Council could choose to structure guidance for the SCOQ FMP in the form of goals, objectives, or both. The FMAT feels that goals would provide valuable long-term guidance, but notes that this is an important structural consideration for the Council to discuss. The FMAT's recommendations include both goals and objectives but the FMAT could provide these in a different format.

Question 2: What does the Council view as the time frame for goals and objectives?
Time frame is an important consideration related to Question 1. Goals and objectives for biological sustainability may be essentially permanent, but other guidance may need to be adjusted over time. The FMAT suggests the Council consider the time frame for long-term guidance, how frequently the Council is likely to revisit FMP goals and objectives, and whether reviews are likely to occur as needed or on a set schedule. The FMAT considered how frequently the Council might revisit goals and objectives (for example, every 10 years, with every other iteration of the Council's Strategic Plan, or in conjunction with ITQ reviews) though did not endorse or recommend a time frame for review.

Question 3: What is the Council's intent for reviewing and potentially revising goals and objectives?
The FMAT suggests the Council consider whether goals and objectives are meant to maintain the current state of the fisheries or look ahead to the future. The FMAT's recommendations for revised goals and objectives (Section 3.2.2) reflect the current fisheries; the development of

forward-looking goals and/or objectives that imply change to the fisheries would be the purview of the Council.

Question 4: How could the Council's review of FMP goals and objectives acknowledge what is working well in the SCOQ fisheries?

Feedback from planning conversations and public comments emphasized that the current objectives are still viewed as relevant and that the fisheries are performing well, though opinions differed on whether the current objectives should be revised. The FMAT felt that revising goals and objectives would refocus FMP guidance and acknowledge improvements to the fisheries that should be maintained. The Council should consider how FMP goals and objectives can most effectively acknowledge what is working well in the SCOQ fisheries.

Question 5: How does the Council want to address measuring the performance of FMP goals and objectives?

The Council's 2014-2018 Strategic Plan states: *Review and update FMP objectives as appropriate to ensure that they remain specific, relevant, and measurable*. The FMAT suggests that the Council discuss this issue. In the future, the Council could request that FMATs give further consideration to measuring the performance of goals and objectives. Some FMAT members indicated that the goals recommended in Section 3.2.2 could be measured using quantitative and/or qualitative metrics.

Question 6: Does the Council want to acknowledge the Maine mahogany quahog fishery in FMP goals and objectives?

Amendment 10 to the SCOQ FMP in 1998 recognizes and provides for the continuation of a small fishery for ocean quahogs in federal waters off the state of Maine. Amendment 10 recognizes the overall objectives of the SCOQ FMP established by Amendment 8 and specifies an additional set of objectives[1]. The FMAT suggests that the Council consider whether this fishery should be acknowledged in overall FMP objectives. The FMAT also notes that the existence of amendment-specific objectives reinforces the need to clearly identify overall FMP objectives as guidance that should be carried forward into future actions.

Question 7: If the Council chooses to consider the draft goals and objectives proposed by the FMAT (Outcome 2), is the wording appropriate?

The FMAT and members of the public noted that the wording of goals and objectives is very important. The FMAT suggests the Council carefully consider the wording of each proposed goal and objective, possible interpretations and consequences, and the balance among goals and objectives as a whole.

[1] The additional objectives specifically for Amendment 10 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (FMP) are:

1. Protect the public health and safety by the continuation of the State of Maine's PSP (Paralytic Shellfish Poisoning) monitoring program for ocean quahogs harvested from the historical eastern Maine fishery.
2. Conserve the historical eastern Maine portion of the ocean quahog resource.
3. Provide a framework that will allow the continuation of the eastern Maine artisanal fishery for ocean quahogs.
4. Provide a mechanism and process by which industry participants can work cooperatively with Federal and State management agencies to determine the future of the historical eastern Maine fishery.

3.2.2 Outcome 2: Revised goals and objectives

The FMAT developed the following goal statements, optional objectives, and questions for the Council's consideration. These goals are derived from the existing SCOQ FMP objectives, statutory requirements of the Magnuson-Stevens Act (MSA), and feedback from planning conversations and public comment; and are reframed as overarching long-term aspirations. The FMAT notes that several long-term goals are embedded within the current SCOQ FMP objectives. The proposed goals and objectives are an effort to distinguish between longer-term goals and shorter-term objectives, simplify and clarify the wording and intent of the current objectives, and provide meaningful long-term guidance. The FMAT believes that the proposed goals are longer-term and would not need to be revised frequently. The objectives, though shorter-term, describe ongoing practices to maintain rather than action items to be completed.

This section includes a summary of the five goals and supporting objectives recommended by the FMAT, followed by a discussion of the FMAT's rationale for each proposed objective and an explanation of how the proposed goal and/or objectives relate to the current FMP objectives (e.g., an update, reorganization, or new content).

Summary of revised goals and objectives

Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

Goal 2: Maintain a simple and efficient management regime.
- Objective 2.1: Promote compatible regulations between state and federal entities.
- Objective 2.2: Promote coordination with the New England Fishery Management Council.
- Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

Goal 3: Manage for stability in the fisheries.
- Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.
- Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.
- Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.
- Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

Goal 1: Biological sustainability

> Goal 1: Ensure the biological sustainability of the surfclam and ocean quahog stocks to maintain sustainable fisheries.

FMAT Discussion

Goal 1 is an update and simplification of the "conserve and rebuild" language from current Objective 1 (*Conserve and rebuild Atlantic surf clam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.*) This revision reflects the current status of the stocks, which are not overfished, undergoing overfishing, or undergoing rebuilding; and is versatile to provide guidance under all resource scenarios. This goal and the two objectives are consistent with the requirements of the MSA and are worded in a way that is more straightforward and understandable to the public.

The Council's recent review of summer flounder FMP goals and objectives may provide useful context for this proposed goal. The Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) considered a similarly worded goal for biological sustainability during their December 2015 review of summer flounder FMP goals and objectives, as part of the Comprehensive Summer Flounder Amendment. The FMAT for this amendment initially recommended a goal ("Ensure the biological sustainability of the summer flounder resource in order to maintain a sustainable summer flounder fishery") paired with two objectives ("Achieve and maintain a sustainable spawning stock biomass" and "Achieve and maintain a sustainable rate of fishing mortality.") The Council and Board recommended merging the two proposed objectives into a single objective that draws on the language of National Standard 1 to specifically address the topics of yield and avoiding overfishing, as follows: "Prevent overfishing, and achieve and maintain sustainable spawning stock biomass levels that promote optimum yield in the fishery." This proposed wording also builds on one of the original objectives for the FMP (Objective 3: Improve the yield from the fishery.) The Comprehensive Summer Flounder Amendment is ongoing and goals and objectives for this FMP have not yet been finalized.

Questions

- Does the Council want to develop one or more objectives related to this goal? For example, objectives could include "Maintain a sustainable biomass" and "Maintain a sustainable rate of fishing mortality." The FMAT notes that these objectives could reinforce and make explicit what is required by the MSA, though the FMAT feels adding objectives is not necessary.
- The Maine mahogany quahog fishery was developed after the current objectives were established. Does the Council want to explicitly acknowledge the Maine mahogany quahog fishery in goals and objectives? If so, where is the appropriate place to do so? An optional objective could read: Maintain the Maine mahogany quahog fishery.

Goal 2: Simplicity and efficiency

> Goal 2: Maintain a simple and efficient management regime.
> Objective 2.1: Promote compatible regulations between state and federal entities.
> Objective 2.2: Promote coordination with the New England Fishery Management Council.
> Objective 2.3: Promote a regulatory framework that minimizes government and industry costs associated with administering and complying with regulatory requirements.

FMAT Discussion

Goal 2 is a simplification and reorganization of the language in current Objective 2 (*Simplify to the maximum extent the regulatory requirement of clam and quahog management to minimize the government and private cost of administering and complying with regulatory, reporting, enforcement, and research requirements of clam and quahog management.*) The words "maintain" and "promote" recognize that these aspects of managing the fisheries have been improved over time.

Objectives 2.1 and 2.2 are new ideas. The FMAT felt that promoting compatibility between state and federal regulations (Objective 2.1) is important "common sense" guidance for supporting simple and efficient management. Objective 2.2 was added in response to planning conversations and public comments and refers to the Council's interest in coordinating and having a presence when the New England Council develops management measures that may impact the SCOQ fisheries.

Questions

Current Objective 2 recognizes specific aspects of the management process for which managers should minimize the government and private cost of administering and complying with requirements. These include regulatory, reporting, enforcement, and research requirements.

- Does the Council want to continue to recognize these specific requirements, for example by adding them to Objective 2.3?

Goal 3: Stability

> Goal 3: Manage for stability in the fisheries.
> Objective 3.1: Provide a regulatory framework that supports long-term stability for surfclam and ocean quahog fisheries and fishing communities.

FMAT Discussion

This goal is a simplification and reorganization that focuses on the overarching value of stability by drawing on the language of two current objectives, Objective 3 (*Provide the opportunity for industry to operate efficiently, consistent with the conservation of clam and quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry*) and Objective 4 (*Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.*) Specifically, this overarching goal of stability addresses

the language of Objectives 3 and 4 referring to balancing harvesting, processing, and biological capacity; efficient utilization of capital resources, and long-term industry planning and investment needs.

The FMAT discussed the most appropriate terminology to describe stakeholders in the management of the surfclam and ocean quahog resources. FMAT members noted that the current objectives use the terms "industry" and "industry participants" and refer to both the harvesting and processing sectors. The FMAT also discussed whether the term "industry" explicitly includes the processing sector, and the relationship of the Council's management decisions to the processing sector. The FMAT suggested the phrase "surfclam and ocean quahog fisheries and fishing communities" as a simple and more encompassing term that includes all components of the SCOQ fishery.

Goal 4: Flexibility

> Goal 4: Provide a management regime that is flexible and adaptive to changes in the fisheries and the ecosystem.
>
> Objective 4.1: Advocate for the fisheries in ocean planning and ocean use discussions.
>
> Objective 4.2: Maintain the ability to respond to short and long-term changes in the environment.

FMAT Discussion

Goal 4 is an update and revision of Objective 4 (*Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs*) and focuses on the values of flexibility and adaptability. Goal 4 and Objectives 4.1 and 4.2 also acknowledge issues identified during planning conversations, including concerns about changing environmental conditions and the Council's implementation of an ecosystem approach to fisheries management.

Objective 4.1 is a new idea recommended by the FMAT. The Council is able to comment on proposed plans (e.g., wind energy development) that may impact fish habitat. The Mid-Atlantic Council also has a representative to the Mid-Atlantic Regional Planning Body. The FMAT recommended Objective 4.1 to recognize the opportunity for the Council to engage more proactively in ocean planning processes to consider and communicate the SCOQ fisheries' interests. The FMAT also recommended including the reference to long-term changes in Objective 4.2 to recognize the need to respond to both short and long-term changes, as current Objective 4 refers only to short term events.

Goal 5: Information

> Goal 5: Support science, monitoring, and data collection that enhance effective management of the resources.
>
> Objective 5.1: Continue to promote opportunities for government and industry collaboration on research.

FMAT Discussion

Goal 5 and Objective 5.1 are new and are not based on any of the current SCOQ FMP objectives. This goal and objective are based on feedback from planning conversations and scoping comments. The FMAT and public participants in the FMAT's webinar discussed the use of the words "support" and "promote" in Goal 5. Public participants noted that the SCOQ industry has been proactive in supporting

and investing in research, and preferred the word “support” for Goal 5. The FMAT agreed that the use of the word “support” in Goal 5 is consistent with the Council’s role and responsibilities relative to science, monitoring, and data collection. The use of “promote” in Objective 5.1 recognizes that the Council can encourage and provide guidance to partners and other entities to focus research that will benefit management.

4.1 Appendix 1: Contributors

The Fisheries Forum requested input from members of the Council's SCOQ Committee and AP and additional state agency representatives in order to develop this document and to inform the FMAT's recommendations. Contributors shared feedback on fishery management plan goals and objectives for SCOQ management to help focus and frame the Council's discussion of this issue.

Fisheries Forum staff conducted 18 informal planning calls with Committee and AP members and state representatives involved in surfclam and ocean quahog management. In addition, Council staff collected public comments on this issue during scoping hearings held in July 2017.

The following individuals contributed to the development of this document through short planning calls.

Surfclam and Ocean Quahog Committee members

- Peter deFur, Appointee (VA)
- Peter Hughes, Appointee (NJ)
- Roger Mann, Appointee (VA)
- Stew Michels, Delaware Division of Fish & Wildlife
- Steve Heins, New York Department of Environmental Conservation
- Howard King, Appointee (MD)
- Wes Townsend, Appointee (DE)
- Patricia Bennett, U.S. Coast Guard
- Mike Ruccio, NOAA Fisheries
- Doug Potts, NOAA Fisheries

Surfclam and Ocean Quahog AP members

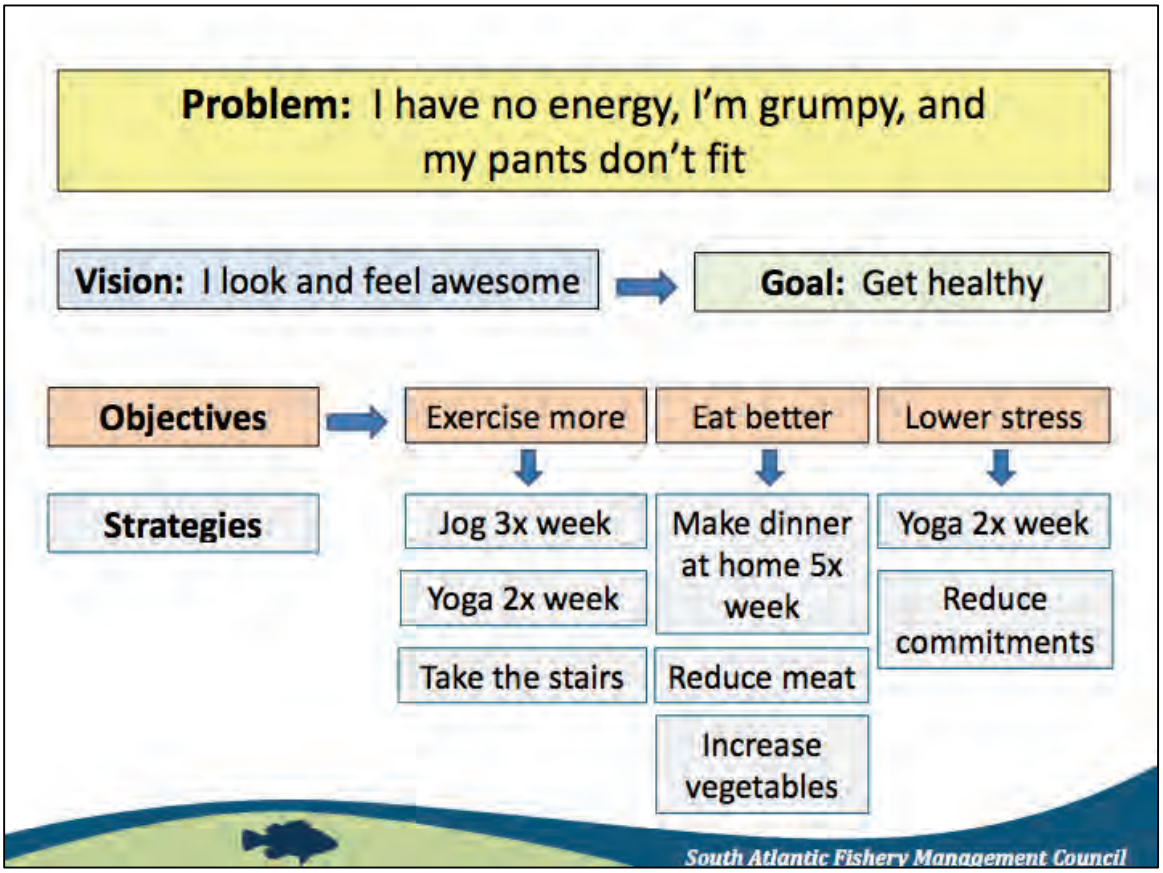
- Thomas Alspach (MD)
- Thomas Dameron (PA)
- Peter Himchak (NJ)
- Sam Martin (NJ)
- Joseph Myers (NJ) with Jeff Pike and Mike Kraft
- David Wallace (MD)

State agency representatives

- Tom Baum and Jeff Normant, New Jersey Division of Fish & Wildlife
- Terry Stockwell, Maine Department of Marine Resources

4.2 Appendix 2: South Atlantic Council example: Goals, objectives, and strategies

This diagram includes examples of goals, objectives, and strategies, and is excerpted from a staff presentation on strategic planning from the South Atlantic Fishery Management Council's March 2013 Council Visioning Workshop.



The full presentation is available online:
http://cdn1.safmc.net/wp-content/uploads/2016/11/28101424/2BB_Attach2b_StrategicPlanningPres-1.pdf

Additional information about the Council's Snapper-Grouper Visioning Process, and resources from past meetings, are available on the council's website.
http://www.safmc.net/resource-library/council-visioning-project

4.3 Appendix 3: Mid-Atlantic Fishery Management Council FMP goals and objectives

Summer Flounder, Scup, Black Sea Bass

1. Reduce fishing mortality in the summer flounder, scup, and black sea bass fisheries to assure that overfishing does not occur.
2. Reduce fishing mortality on immature summer flounder, scup, and black seabass to increase spawning stock biomass.
3. Improve the yield from the fishery.
4. Promote compatible management regulations between state and Federal jurisdictions.
5. Promote uniform and effective enforcement of regulations.
6. Minimize regulations to achieve the management objectives stated above.

Bluefish

1. Increase understanding of the stock and of the fishery.
2. Provide the highest availability of bluefish to U.S. fishermen while maintaining, within limits, traditional uses of bluefish.
3. Provide for cooperation among the coastal states, the various regional marine fishery management councils, and federal agencies involved along the coast to enhance the management of bluefish throughout its range.
4. Prevent recruitment overfishing.
5. Reduce the waste in both the commercial and recreational fisheries.

Spiny dogfish

1. Reduce fishing mortality to ensure that overfishing does not occur.
2. Promote compatible management regulations between state and Council jurisdictions and the US and Canada.
3. Promote uniform and effective enforcement of regulations.
4. Minimize regulations while achieving the management objectives stated above.
5. Manage the spiny dogfish fishery so as to minimize the impact of the regulations on the prosecution of other fisheries, to the extent practicable.
6. Contribute to the protection of biodiversity and ecosystem structure and function.

Squid, Mackerel, Butterfish

1. Enhance the probability of successful (i.e., the historical average) recruitment to the fisheries.
2. Promote the growth of the U.S. commercial fishery, including the fishery for export.
3. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP.
4. Provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy.
5. Increase understanding of the conditions of the stocks and fisheries.
6. Minimize harvesting conflicts among U.S. commercial, U.S. recreational, and foreign fishermen.

Surfclam and Ocean Quahog

1. Conserve and rebuild Atlantic surfclam and ocean quahog resources by stabilizing annual harvest rates throughout the management unit in a way that minimizes short term economic dislocations.
2. Simplify to the maximum extent the regulatory requirement of surfclam and ocean quahog management to minimize the government and private cost of administering and complying with

regulatory, reporting, enforcement, and research requirements of surfclam and ocean quahog management.

3. Provide the opportunity for industry to operate efficiently, consistent with the conservation of surfclam and ocean quahog resources, which will bring harvesting capacity in balance with processing and biological capacity and allow industry participants to achieve economic efficiency including efficient utilization of capital resources by the industry.
4. Provide a management regime and regulatory framework which is flexible and adaptive to unanticipated short term events or circumstances and consistent with overall plan objectives and long term industry planning and investment needs.

Tilefish

The overall goal of this FMP is to rebuild tilefish so that the optimum yield can be obtained from this resource. To meet the overall goal, the following objectives are adopted:

1. Prevent overfishing and rebuild the resource to the biomass that would support MSY.
2. Prevent overcapitalization and limit new entrants.
3. Identify and describe essential tilefish habitat.
4. Collect necessary data to develop, monitor, and assess biological, economic, and social impacts of management measures designed to prevent overfishing and to reduce bycatch in all fisheries.

4.4 Appendix 4: Example of revised goals and objectives provided by Bumble Bee Seafoods

The following is an excerpt from scoping comments provide in a letter from Bumble Bee Seafoods to the Mid-Atlantic Fishery Management Council, July 12, 2017. These comments are the only example of a new full set of goals and objectives suggested by contributors to this project, and are included in this document for reference.

Bumble Bea Seafood supports the Council's effort to revise the goals and objectives for the OQSC FMP as they are not consistent with today's fishery and management issues. Provided below is a list of revised/rewritten goals and objectives which we believe more accurately reflect today's fishery:

1. Conserve and sustainably manage the Atlantic surf clam and ocean quahog resources throughout the management unit to prevent overfishing and ensure that the resource is not overfished while achieving optimum yield from the resource.
2. Promote opportunities for government and industry scientific research, especially into the effects of warming ocean temperatures and changing ocean conditions on the OQSC resources, and research necessary for sound management decisions.
3. Provide a simplified management regime and regulatory framework that minimize government and industry cost while allowing participants to achieve economic efficiency including efficient utilization of capital resources by industry.
4. Promote compatible management regulations between state and Councils jurisdiction.
5. Strengthen coordination between the New England Fishery Management Council and the Mid-Atlantic Fishery Management Council so that actions by one Council do not negatively impact the ability of industry to achieve optimum yield.

Appendix C

Table 1. Essential Fish Habitat descriptions for federally-managed species/life stages in the U.S. Northeast Shelf Ecosystem that are vulnerable to bottom tending fishing gear.

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
American plaice	juvenile	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 150	Fine grained sediments, sand, or gravel
American plaice	adult	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 175	Fine grained sediments, sand, or gravel
Atlantic cod	juvenile	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	25 - 75	Cobble or gravel
Atlantic cod	adult	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	10 - 150	Rocks, pebbles, or gravel
Atl halibut	juvenile	GOM and GB	20 - 60	Sand, gravel, or clay
Atl halibut	adult	GOM and GB	100 - 700	Sand, gravel, or clay
Barndoor skate	juvenile/ adult	Eastern GOM, GB, SNE, Mid-Atlantic Bight to Hudson Canyon	l0-750, most < 150	Mud, gravel, and sand
Black sea bass	juvenile	GOM to Cape Hatteras, NC, including estuaries from Buzzards Bay to Long Island Sound, Gardiners Bay, Barnegat Bay to Chesapeake Bay, Tangier/ Pocomoke Sound, and James River	1 - 38	Rough bottom, shellfish/ eelgrass beds, manmade structures, offshore clam beds, and shell patches
Black sea bass	adult	GOM to Cape Hatteras, NC, including Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay, and James River	20 - 50	Structured habitats (natural and manmade), sand and shell substrates preferred
Clearnose skate	juvenile/ adult	GOM, along continental shelf to Cape Hatteras, NC, including the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay mainstem	0 – 500, most < 111	Soft bottom and rocky or gravelly bottom
Haddock	juvenile	GB, GOM, and Mid-Atlantic south to Delaware Bay	35 - 100	Pebble and gravel
Haddock	adult	GB, eastern side of Nantucket Shoals, and throughout GOM	40 - 150	Broken ground, pebbles, smooth hard sand, and smooth areas between rocky patches
Little skate	juvenile/ adult	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes estuaries from Buzzards Bay south to mainstem Chesapeake Bay	0-137, most 73 - 91	Sandy or gravelly substrate or mud
Ocean pout	eggs	GOM, GB, SNE, and Mid-Atlantic south to Delaware Bay, including the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay and Cape Cod Bay	<50	Generally sheltered nests in hard bottom in holes or crevices
Ocean pout	juvenile	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, and Cape Cod Bay	< 50	Close proximity to hard bottom nesting areas

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Ocean pout	adult	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, MA Bay, Boston Harbor, and Cape Cod Bay	< 80	Smooth bottom near rocks or algae
Pollock	adult	GOME, GB, SNE, and Mid-Atlantic south to New Jersey and the following estuaries: Passamaquoddy Bay, Damariscotta R., MA Bay, Cape Cod Bay, Long Island Sound	15 – 365	Hard bottom habitats including artificial reefs
Red hake	juvenile	GOM, GB, continental shelf off SNE, and Mid-Atlantic south to Cape Hatteras, including the following estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, and Chesapeake Bay	< 100	Shell fragments, including areas with an abundance of live scallops
Red hake	adult	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras, these estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, Delaware Bay, and Chesapeake Bay	10 - 130	In sand and mud, in depressions
Redfish	juvenile	GOM, southern edge of GB	25 - 400	Silt, mud, or hard bottom
Redfish	adult	GOM, southern edge of GB	50 - 350	Silt, mud, or hard bottom
Rosette skate	juvenile/ adult	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33-530, most 74-274	Soft substrate, including sand/mud bottoms
Scup	juvenile/ adult	GOM to Cape Hatteras, NC, including the following estuaries: MA Bay, Cape Cod Bay to Long Island Sound, Gardiners Bay to Delaware inland bays, and Chesapeake Bay	0-38 for juv 2-185 for adult	Demersal waters north of Cape Hatteras and inshore estuaries (various substrate types)
Silver hake	juvenile	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, ME, MA Bay to Cape Cod Bay	20 – 270	All substrate types
Summer Flounder	juvenile/ adult	GOM to Florida – estuarine and over continental shelf to shelf break	0-250	Demersal/estuarine waters, varied substrates. Mostly inshore in summer and offshore in winter.
Smooth skate	juvenile/ adult	Offshore banks of GOM	31–874, most 110-457	Soft mud (silt and clay), sand, broken shells, gravel and pebbles
Thorny skate	juvenile/ adult	GOM and GB	18-2000, most 111-366	Sand, gravel, broken shell, pebbles, and soft mud
Tilefish	juvenile/ adult	Outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary	100 - 300	Burrows in clay (some may be semi-hardened into rock)
White hake	juvenile	GOM, southern edge of GB, SNE to Mid-Atlantic and the following estuaries: Passamaquoddy Bay, ME to Great Bay, NH, Massachusetts Bay to Cape Cod Bay	5 - 225	Seagrass beds, mud, or fine grained sand
Winter flounder	adult	GB, inshore areas of GOM, SNE, Mid- Atlantic south to Delaware Bay and the estuaries from Passamaquoddy Bay, ME to Chincoteague Bay, VA	1 - 100	Mud, sand, and gravel

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Winter skate	juvenile/ adult	Cape Cod Bay, GB, SNE shelf through Mid-Atlantic Bight to North Carolina; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 371, most < 111	Sand and gravel or mud
Witch flounder	juvenile	GOM, outer continental shelf from GB south to Cape Hatteras	50 - 450 to 1500	Fine grained substrate
Witch flounder	adult	GOME, outer continental shelf from GB south to Chesapeake Bay	25 - 300	Fine grained substrate
Yellowtail flounder	adult	GB, GOM, SNE and Mid-Atlantic south to Delaware Bay and these estuaries: Sheepscot River and Casco Bay, ME, MA Bay to Cape Cod Bay	20 - 50	Sand or sand and mud

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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

M E M O R A N D U M

Date: 17 May 2019

To: Michael P. Luisi, Chairman, MAFMC

From: John Boreman, Ph.D., Chair, MAFMC Scientific and Statistical Committee

Subject: Report of the May 2019 SSC Meeting

The SSC met in Baltimore on the 7th and 8th of May 2019 primarily to review (and perhaps modify) 2020 ABC recommendations previously developed for Atlantic Mackerel, Butterfish, Longfin Squid, *Illex* squid, Surfclam, and Ocean Quahog (Attachment 1). The SSC also had an interactive session with Michelle Duval as part of the Council's 2020-2024 strategic planning exercise, and performed a final review of the OFL CV guidelines document for submission to the Council. Under Other Business, the SSC discussed its potential role in providing economic and social science advice to the Council on pending and proposed management actions.

The SSC had at least 11 members present for the review of ABC recommendations, which constituted a quorum (Attachment 2). Also participating were Council members and staff, NEFSC staff, and representatives from the fishing industry. Documents referenced in this report can be accessed via the SSC's meeting website (http://www.mafmc.org/ssc-meetings/2019/may-7-8).

Atlantic Mackerel

Jason Didden (Council staff) presented the data update for Atlantic Mackerel; Kiersten Curti (NEFSC lead scientist for mackerel) participated in the discussion via webinar. Jason reviewed the status of management, results of the recent NEFSC trawl surveys, updated commercial and recreational catch statistics, and the updated Fishery Performance Report prepared by the Council's Advisory Panel. Although not yet published, summarized preliminary findings of the recent stock assessment of Atlantic Mackerel conducted by the Canadians point to continued low levels of stock abundance and recruitment in Canadian waters. All indications from data collected by the NEFSC suggest that recruitment since the moderately strong 2015 year class, which was used by the SSC last year in stock biomass projections to derive ABCs for 2019, 2020, and 2021, has been below the long-term average. Based on the recent poor stock information from the US and Canada, the SSC decided it could no longer endorse its previous ABC recommendation for 2020. The SSC's responses to terms of reference provided by the Council should this situation occur (*in italics*) are as follows.

For Atlantic Mackerel, the SSC will provide a written statement that identifies the following for the 2020 fishing year:

1) *The appropriateness of the previously recommended 2020 ABC as specified under the Council's five-year rebuilding schedule. If the previously recommended 2020 ABC is inappropriate for the Council-approved rebuilding schedule, specify an alternative ABC and provide any supporting information used to make this determination.*

   Based on the SSC's recommendation developed in 2018, the 2020 ABC was set to increase from its 2019 level. The 2020 ABC value recommended by the SSC was predicated on a rebuilding strategy that recognized a strong 2015 year class and moderate year classes subsequently. The SSC determined that it would not be appropriate to recommend the higher 2020 ABC level based on recruitment levels in 2016-2018 that were lower than those anticipated in the rebuilding plan. Instead, the SSC recommends maintaining the ABC for 2020 at the level established for 2019 (ABC = **29,184 mt**). The SSC views this as a prudent level given the observed lower recruitments.

   The SSC anticipates receiving an assessment update in 2020 that will provide a quantitative foundation for future ABC specifications. The SSC requests that, within the limits of an updated assessment, these analyses consider evidence of alternative recruitment regimes in the most recent decade, and of variable rates of natural mortality.

2) *The most significant sources of scientific uncertainty associated with determination of the ABC.*

   The SSC notes the following areas of concern that led it to reduce the ABC for 2020:
   - Low level of recent recruitments evidenced in the:
     - Recent Canadian survey data,
     - NEFSC spring survey, and
     - Updated estimates of catch-at-age in the recreational and commercial data.
   - Persistent, low levels of spawning stock biomass in the recent Canadian assessment.
   - High estimates of fishing mortality in the Canadian assessment for 2018.
   - The unknown impacts of the 2019 closure of the mackerel fishery in response to the river herring / shad cap.

   These sources of concern stand in addition to the sources of uncertainty identified by the SSC in its ABC specification for 2019-2021, which are:
   - The estimated size of the most recent year class in the assessment (substantially higher than most recent recruitments) drives assumptions about rebuilding times, OFLs, and ABCs;
   - Conversion of egg survey results to the spawning stock biomass estimate;
   - The assessment is sensitive to the distribution of Atlantic Mackerel, which has been changing and may continue to change;
   - Trawl survey representation of abundance and age structure;
   - The assumption of fixed natural mortality rate and data gaps associated with major predators of mackerel; and

- Missing catch information from bait and recreational fisheries in Canada.

3) *The materials considered in reaching its recommendations.*

- Staff presentation to the SSC (7 May 2019)
- 2017 Atlantic Mackerel benchmark assessment
- 2019 Atlantic Mackerel, Squid, and Butterfish AP Fishery Performance Report
- Mackerel, Squid, and Butterfish Staff Memo and Recommendations
- 2019 Atlantic Mackerel Data Update
- 2019 Atlantic Mackerel AP Fishery Information Document
- Pre-publication Canadian DFO Data
- Letter from Roger Fleming et al. to Michael Pentony, dated April 30, 2019

These materials can be accessed via the SSC meeting website (http://www.mafmc.org/ssc-meetings/2019/may-7-8).

4) *A conclusion that the recommendations provided by the SSC are based on scientific information the SSC believes meets the applicable National Standard guidelines for best scientific information available.*

The SSC believes that the recommendations provided are based on scientific information that meets the applicable National Standard guidelines for best scientific information available.

Butterfish

Jason Didden presented the data update for Butterfish; Chuck Adams (NEFSC lead scientist for the species) participated in the discussion via webinar. Jason reviewed the status of management, results of the recent trawl surveys, updated catch statistics, and the updated Fishery Performance Report prepared by the Council's Advisory Panel. The SSC decided not to change its previously-derived ABC recommendation for Butterfish for 2020 (ABC = **32,063 mt**) because the most recent stock indices are within the expected range.

Longfin Squid and *Illex* Squid

The NEFSC data updates for both squid species were presented by Jason Didden, while Lisa Hendrickson (NEFSC lead scientist for the species) participated in the discussion via webinar. Jason's presentation included updated catch statistics and survey indices, and a summary of the most recent Fishery Performance Report prepared by the Council's Advisory Panel. The SSC noted that the declining trend in mean body weight of squid captured in the trawl surveys still seems to be an issue, which Lisa Hendrickson attributes to a combination of factors (incoming recruitment, dying spawners, emigration from the survey area, and the environment). The SSC decided that the information presented was not compelling enough to change its previously-derived 2020 ABC recommendations for either Longfin Squid (ABC = **23,400 mt**) or *Illex* squid (ABC = **26,000 mt**).

Surfclam and Ocean Quahog

Dan Hennen (NEFSC lead scientist for both clam species, participating via webinar) began the SSC discussion with an update on early findings from the redesigned NEFSC clam dredge survey, which has been targeting Surfclam. He noted that the centroid of distribution for Surfclam has been steadily shifting offshore, probably due to higher water temperatures that seem to have a more negative impact on larger individuals. When asked if data are being collected on the Ocean Quahog captured during the survey Dan replied that biological measurements were being taken on the captured specimens, but the samples could not be used to quantify abundance.

Jessica Coakley (Council staff) then presented the NEFSC data updates and Fishery Performance Reports for Surfclam and Ocean Quahog. Based on the information provided, the SSC decided there was no compelling reason to change its previously-set 2020 ABCs for either species. Assessment updates for both species are expected in 2020.

MAFMC's Five-Year Strategic Plan (2020-2024)

As part of information-gathering for drafting the Council's five-year strategic plan for 2020-2024, Michelle Duval (under contract to the Council) used the SSC meeting as an opportunity to get feedback on emerging themes and future priorities. She presented the background and purpose of the plan, results of the stakeholder surveys that have been conducted so far, and the timeline for the plan's completion. SSC members made a number of recommendations, including analysis of the stakeholder survey results state-by-state, and binning the responses into those from people whose livelihoods are directly affected by regulations developed by the Council and those that are not. The SSC stressed the importance of evaluating whether the plan is actually working, i.e., tracking the connection between the strategic plan and the annual implementation plans upon which it based. A recommendation was also made to review the Council's budget expenditures during the past five years to see how they stacked up against the objectives of the strategic plan currently in place. The session ended with a discussion of the connection (or lack thereof) between the five-year strategic plan and the five-year research plan.

OFL CV Guidelines

The SSC undertook one last full committee review of the guidelines for assigning a coefficient of variation (CV) value to estimates of the overfishing limit (OFL), a key step in determining ABCs. A concern expressed by SSC members is the amount of lead time needed to complete the "OFL CV framework" prior to the meeting during which the ABC will be developed. Much of the timing depends on when the assessment is submitted to the SSC. If the deadline for submitting the assessment is not met, one suggestion is to set aside a day ahead of the meeting to enable the SSC lead to work with the OFL CV review panel in drafting the framework. All agreed that SSC species leads can begin drafting the OFL CV framework immediately, based on

past history, which should speed up the process. The SSC also agreed that the NEFSC lead scientist for the species in question should be consulted early on in drafting the OFL CV framework. Finally, the SSC wants to make it clear that the guidelines are not set in stone, and that the SSC still has the flexibility to change criteria or the value of the CV bins (now 60%, 100%, and 150%) depending on circumstances unique to the species in question.

The SSC formally endorsed the OFL CV guidelines drafted by the working group. Over the next two weeks the working group will incorporate the suggestions made by the full SSC and perform final edits before submitting the draft guidelines to the Council for approval at its June meeting.

Other Business

Providing Economic and Social Science Advice to the Council

As part of the SSC's May 2019 scheduled review of the 2020 ABCs for Surfclam and Ocean Quahog, another case example arose that demonstrates the potential value for expanding the reliance on the SSC for science advice beyond advice on stock assessments to include economics and social science. There are several economic statements and conclusions about proposed management alternatives for an excessive shares amendment to the Surfclam and Ocean Quahog Fishery Management Plan contained in the Fishery Performance Report that are inaccurate and not supported by economic science facts, and the SSC is highlighting this lack of scientific rigor for the Council. Section 302(g) of the Magnuson-Stevens Act defines the SSC's role to include advising the Council on science information and quality across all disciplines. We are bringing this example of SSC economic advice to the attention of the Council now because, at our last meeting, Council vice-Chairman Warren Elliott personally asked for feedback about the desired composition and role of the Committee in light of Council's consideration of how to fill the four SSC vacancies.

The SSC wishes to work with the Council and staff in developing a formalized process to provide SSC economic advice and reviews to evaluate the economic science basis of Council actions (as requested), with the purpose of maintaining the highest quality scientific peer review and credibility of Council actions. This expanded advisory capacity of the SSC will require a discussion among SSC and Council members of when and where the SSC can best fulfill the economic analysis and review needs of the Council, and if added expertise on the SSC is necessary to fulfill this role. The SSC looks forward to a positive response for such a meeting.

In the meantime, given that the Council sent the excessive shares amendment back to committee, primarily over economic issues raised in alternatives 5 and 6, the SSC submits comments (Attachment 3) to assist the Council as it decides whether to include these alternatives in the public document, and looks forward to providing further support if requested.

c: SSC Members, Warren Elliott, Chris Moore, Brandon Muffley, José Montañez, Jessica Coakley, Kiley Dancy, Jason Didden, Kiersten Curti, Chuck Adams, Dan Hennen, Lisa Hendrickson, Jan Saunders

Mid-Atlantic Fishery Management Council

Scientific and Statistical Committee Meeting

May 7 – 8, 2019

Royal Sonesta Harbor Place

550 Light Street, Baltimore, MD, 21202

AGENDA

Tuesday, May 7, 2019

10:00 Atlantic Mackerel data and fishery update; review of previously recommended 2020 ABC (Didden)

11:00 Butterfish data and fishery update; review of previously recommended 2020 ABC (Didden)

12:00 Lunch

1:00 Longfin Squid data and fishery update; review of previously recommended 2020 ABC (Didden)

2:00 *Illex* Squid data and fishery update; review of previously recommended 2020 ABC (Didden)

3:00 Atlantic Surfclam data and fishery update; review of previously recommended 2020 ABC (Coakley)

4:00 Ocean Quahog data and fishery update; review of previously recommended 2020 ABC (Coakley)

5:00 Adjourn

Wednesday, May 8, 2019

8:30 Council 2020-2024 Strategic Plan – overview and comments (Duval)

10:00 OFL CV guidelines document – review and approve (OFL CV workgroup)

11:30 Other business

12:00 Adjourn

Attachment 2

MAFMC Scientific and Statistical Committee
7-8 May 2019

Meeting Attendance

Name	Affiliation
SSC Members in Attendance:	
John Boreman (SSC Chairman)	NOAA Fisheries (retired)
Tom Miller (SSC Vice-Chairman)	University of Maryland – CBL
Ed Houde	University of Maryland – CBL (retired)
Dave Secor (May 7th AM only)	University of Maryland – CBL
Paul Rago	NOAA Fisheries (retired)
Wendy Gabriel	NOAA Fisheries Northeast Fisheries Science Center
Lee Anderson	University of Delaware (emeritus)
Mark Holliday	NOAA Fisheries (retired)
Mike Frisk	Stony Brook University
Rob Latour	VIMS
Brian Rothschild	University of Massachusetts – Dartmouth (emeritus)
Olaf Jensen	Rutgers University
Others in attendance:	
Jessica Coakley (May 7th only, May 8th via webinar)	MAFMC staff
José Montañez (May 7th only, May 8th via webinar)	MAFMC staff
Jason Didden (May 7th only)	MAFMC staff
Kiley Dancy (May 8th only)	MAFMC staff
Brandon Muffley	MAFMC staff
Kiersten Curti (via webinar, May 7th only)	NOAA Fisheries Northeast Fisheries Science Center
Lisa Hendrickson (via webinar, May 7th only)	NOAA Fisheries Northeast Fisheries Science Center
Chuck Adams (via webinar, May 7th only)	NOAA Fisheries Northeast Fisheries Science Center
Dan Hennen (via webinar, May 7th only)	NOAA Fisheries Northeast Fisheries Science Center
Warren Elliott	MAFMC Vice-Chair
Jeff Kaelin	Lund's Fisheries
Greg DiDomenico (May 7th only)	GSSA
Dave Wallace (May 7th only)	Wallace and Associates
Michelle Duval (May 8th only)	MAFMC contractor

SSC Comments on the SCOQ Excessive Shares Amendment

As customary, at the SSC's May 2019 scheduled review of the 2020 ABCs for Surfclam and Ocean Quahog (SCOQ), a Council Advisory Panel's Fishery Performance Report (FPR) was submitted to the SSC for consideration. The primary purpose of the FPRs (and public comments at these ABC-setting meetings) is to contextualize catch histories for the SSC by providing information about fishing effort, market trends, environmental changes, and other factors.

The FPR, however, began with an extended discussion of several policy positions of the industry on various regulatory and fishery management actions that had been undertaken or were being proposed by NOAA Fisheries and/or the Council. The FPR is not intended to be a referendum or an industry poll on policy and management options, and normally the SSC simply disregards such oversteps.

However, the FPR (and public comment provided at the May 7th SSC meeting) made several economic statements and conclusions about proposed management alternatives for an excessive shares amendment to the SCOQ plan that were inaccurate and not supported by economic science facts. The FPR reaffirmed an action taken at the last Council meeting, during which the Council passed a motion to send the SCOQ Excessive Shares Amendment back to committee, partially at least, to reconsider the question of whether alternatives 5 and 6 should be included in the final document. The text of the FPR and the public comment concluded alternatives 5 and 6 were "... market restructuring plans and not excessive share controls." This characterization is factually incorrect. As described in the amendment and will be further explained in detail below, alternatives 5 and 6 were explicitly designed to address monopsony power in the market for ITQ shares. Moreover, excluding these alternatives from further discussion at this early stage of plan amendment unduly constrains discussion of a significant economic tool for resolution of the Council's excessive shares requirement.

The SSC's role includes advising the Council on science information and quality, and had such errors in fact been of a biological nature, the SSC would have brought this lack of scientific rigor to the attention of the Council. The following evaluation explores the economic science underpinnings of the misleading statements and inaccuracies.

At the outset, it should be clear that this economic evaluation is not intended to subsume the Council's sole role in policy making. The purpose here is to provide advice and general background information from an economic science perspective, and can be summarized as follows:

(1) The Council is required by law to address excessive shares to prevent market power. [*Monopoly* market power occurs when the ITQ system allows quota holders to reduce product *output* such that their behavior affects market-wide prices. *Monopsony* market power occurs when the ITQ system allows quota owners to affect the market-wide price of *inputs*, in this case, of quota shares.];
(2) Because of unique circumstances in the SCOQ industry, market power in the form of monopsony exists and has existed for some years, and has led to serious effects on the industry;
(3) Alternatives 5 and 6 would remedy the market power and correct for future problems, but would also result in measurable distribution effects. Due diligence requires a full consideration of all current alternatives to achieve open discussion and transparency; and
(4) There is also a need for economic research to measure the economic effects quantitatively, and the likely distribution of those effects though a detailed assessment of each.

As a starting point, the purpose of the excessive shares amendment is to make sure that the operation of the ITQ program does not foster or enable market power over the price of product or of catch shares. As further background, a very big problem faced during the development of the ITQ programs was how to make the initial allocation of quota. During the public hearings people were much more interested in who would win and who would lose from the different formulae than they were in the actual workings of the program; i.e., it was all about distribution. In any event, the allocation was made and participants received ITQ shares that were supposed to give them a viable piece of the action. That was one of the arguments made in favor of adopting the ITQ program in the first place.

The SCOQ industry and ITQ program, however, is quite special and almost unique in at least three respects. First, catch must be processed before sale; more than simply heading and gutting. Second, there are few buyers of the processed product (few large companies e.g., Campbell's Soup Company). Third, for a number of years the annual TAC has not been harvested for either species.

For ease of exposition below let us specify the market equilibrium output as MEO, or the amount the industry is willing and able to produce and sell in a given year, all else being equal. The current condition with both species is TAC > MEO.

A plausible explanation for the current state of the industry (the fundamentals of which are described in the amendment) follows from these three unique aspects and it differs from the picture painted by the industry. Once the processing sector accumulated enough catch shares to match the market equilibrium output the game was over. The processors would produce the MEO level of production with their own annual shares, and all other annual shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, there is no problem because, to fulfill the market demand. all of the catch shares will have to be utilized and the ownership of catch shares will guarantee all owners a share of the action. But in the SCOQ case, some catch share owners cannot sell or rent their shares because of the monopsony power of the processors, and their

operational piece of the action is zero. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs.

The industry argument refers to this group as "ITQ owning non-participants who do not contribute to the industry and have no investment at risk." Another possible description is a group of ITQ owners who have been systematically deprived of their piece of the action over the years due to the market power of processors, which follows from the three unique aspects in this program mentioned above. The very existence of non-participating ITQ owners is proof of monopsony power.

Both alternatives 5 and 6 attempt to address this problem and are worth consideration and full study. Essentially, they propose two types of catch shares: Type A and Type B. The total amount of Type A shares is set equal to some average of the MEO over the last few years. This will be allocated to all ITQ owners in the normal fashion. The amount of Type B shares will equal TAC minus MEO and can only be used when all of the type A has been used. [Type B shares provide the opportunity for the industry to expand production up to the safe limits of the biologically determined TAC if the market expands.] To produce enough to meet MEO, the processors will have to purchase all (or close to all) of the Type A shares. As a result, they will lose their monopsony power, because the number of Type A shares is equal to MEO. All ITQ owners will get a piece of the action.

What are the ramifications of this? Just like the initial allocation, the whole thing is about distribution. And the full effects of this require careful study.

However, at first glance some of the industry statements appear spurious.

Will this increase the cost of harvesting? No. There is a difference between real costs and financial costs. The real cost of harvesting and processing the product, in terms of actual inputs used, should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc.

Will the processors have to pay more in financial costs if these alternatives are implemented? Yes. To produce the market equilibrium output, the processors will have to purchase the Type A shares given to the formerly "ITQ owning non-participants," and that will decrease processor net revenues. But the decrease in net revenue is due to the loss in monopsony gains (described above), which will be transferred to the now fully participating ITQ owners. Correcting for the monopsony market power in the processing sector, which is the purpose of the excessive shares amendment, will cause this corrective redistribution.

Will the price to the consumer go up because the increase in financial costs will be passed on to the consumer? No. We have heard many times that the clam processing industry is in a tough position because Campbell's/other buyers will not consider price increases due to the many substitute products for Surfclam. The processors say that if they attempt to raise Surfclam product prices their customers will just use other substitute products in the chowder. Thus, the

price to consumers for soup will not go up, but as described above, the net returns to the processing industry will go down.

The Council should not discard alternatives 5 and 6, which were conceived by the FMAT to directly address the monopsony market power problem. The excessive shares amendment has definite redistribution effects and they need to be fully evaluated. However, the complete proposed amendment, including alternatives 5 and 6, should be subject to a full public discussion.

Finally, answers to policy questions require clear and credible economic analysis. It is acknowledged that insufficient economic data make the qualitative analysis in the amendment the best available science presently. Notwithstanding the current limitations on the quantity of available economic data, it would be useful if the Council and the industry worked cooperatively to obtain the necessary data to quantitatively measure the economic effects of alternatives in the amendment such that stakeholders and the public can more clearly distinguish between economic effects (changes in real costs and prices) and the distribution effects (identifying the winners and losers and explaining how and why the changes follow from alternatives being considered). This will add to the clarity of discussion, improve the quality of science used in decision-making, and help ensure the sustainability of our Nation's Surfclam and Ocean Quahog fishery resources.

Surfside Foods, LLC

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PO Box 692
Port Norris, NJ
08349

September 14, 2019

Chris Moore, Ph.D.,
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 19901

Dear Dr. Moore,

Please accept these comments on behalf of myself and Surfside Foods, LLC in regard to the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment document currently out for public comment through September 14, 2019.

After extensive review of all the relevant scientific material related to the Atlantic Surfclam and Ocean Quahog Excessive Shares matter and the potential Amendment, it is obvious to me that the Public Hearing Document (PHD) in no way represents the best available science and in fact if the PHD were relied upon as intended, the SCOQ Fishery could be unnecessarily and materially harmed. Surfside Foods has submitted two NOAA Information Quality Requests for Correction, one for the lack of Integrity of the Public Hearing Document against improper modifications and one for the lack of Quality of the MAFMC Report of the May 2019 SSC Meeting, Attachment 3, both of which are now part of the record of this Public Comment Period. I will not repeat the claims made within those documents but would like to state the claims of those requests are relevant to and relied upon within this public submission.

In the strongest possible terms Surfside Foods submits that the Atlantic Surfclam and Ocean Quahog Excessive Share Amendment should not proceed until the MAFMC Report of the May 2019 SSC Meeting pages 8 – 11, and its use within the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment / Public Hearing Document / Comment Period August 1 – September 14, 2019 / Prepared by the Mid-Atlantic Fishery Management Council (MAFMC) in cooperation with the National Marine Fisheries Service, including text copied directly from these pages into the Public Hearing Document and the use of these pages as a reference source of information within the Public Hearing Document is corrected.

We are in complete agreement with the statement in the statements in the SCOQ Excessive Shares Amendment Comments, Thomas Sproul, PH.D. September 13, 2019, “I find that Alternative 1 (Status Quo/No Action) is the most prudent alternative to adopt, followed by Alternative 2.3 (Quota share cap at 95%), which has the least potential for economic harm among the options where a share cap is established.” and “Alternatives 5 and 6 (two-tier quota) are likely to be the most economically harmful based on my analysis, so I strongly recommend they not be adopted. Specifically, industry data suggest that non-seller, non-participant quota holders are themselves highly concentrated. The two-tiered quota structure contemplated will turn these non-participants into oligopoly sellers of their “A shares.” Economic theory predicts they will restrict sales to increase their price received and that landings in the SCOQ fisheries will fall below their current level.”

We are also in complete agreement with the statements within the Working Clam Fishery Coalition's Comments on the Atlantic Surfclam and Ocean Quahog Excessive Shares Amendment, September 14, 2019 and submitted by Counsel for the Working Clam Fishery Coalition that Alternative 5 & 6 do not comply with the MSA National Standards 1, 2, 4, 5 and 8 for the reasons detailed within that public submission.

While we strongly believe in our position, with the realization that the MAFMC and/or NMFS may not agree with our arguments that the best available science is not being utilized for consideration of this Amendment, we would put forth a compromise, and our support would be of the following measures.
Surfside Foods, LLC would support Sub Alternative 4.3 with a slight modification.
Surfclams
Two-part cap with an ownership cap of 35% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 65%.
Ocean Quahogs
Two-part cap with an ownership cap of 40% and the combined cap (quota share ownership plus leasing of annual allocation or cage tags) at 70%.
Surfside Foods, LLC would support the following.
ES-2. Summary of excessive shares review alternatives: Alternative 1: No Action
ES-3. Summary of framework adjustment process alternatives: Alternative 1: No Action
ES-4. Summary of multi-year management measures alternatives: Alternative 2: Specifications to be set for the maximum number of years consistent with the NRCC approved stock assessment schedule.

On behalf of myself and Surfside Foods, LLC, we appreciate the opportunity to comment on this very important decision to be made that could have devastating ramification for our company and industry if Alternatives 5 or 6 are recommended to the NMFS for this Amendment.

We sincerely hope that the MAFMC take the right and correct action of correcting the record before proceeding with this action.

Regards,

Thomas Dameron

Thomas Dameron
Government Relations &
Fisheries Science Liaison
Surfside Foods, LLC

From:	Squarespace
To:	Montanez, Jose
Subject:	Form Submission - SCOQ Excessive Shares Amendment Comments
Date:	Saturday, 14 September 2019 11:22:54 AM

Name: anonymous anonymous

Email:

Comments: To whom it may concern,

This public comment is in reference to the Excessive Shares issue.

Excessive Shares have been an ongoing conflict with processors and independent ITQ shareholders for some time now. Excessive Shares is very much in relation to quota allocation. Quite simply, if the quota allocation is set at a high level over what the demand/market can handle then you give large shareholders an advantage over other independent shareholders. The high quota over demand gives them a "bump" in their own quotas to manipulate the industry by squeezing out independent shareholders so that they can control every aspect of the clam industry.

I have heard from other council meetings that the processors complain constantly about, and I quote, "Couch, Armchair, and Non-Participant" shareholders should have no stake or claim to the ITQ system because they "just want to collect free money and have no risk or investment" in the clam industry.

Here is my response to those comments.
First of all, I earned those ITQ shares under the rules and guidelines put forth by NOAA and The Fisheries Council. A lot of the clams I caught over the years went to other company/boat owners in which I got a paycheck but no stake in the resource. These processors were supplied a product they needed to make their money. Then when I was able to get my own boat and buying and leasing quota (investment) and put a lot of years on the ocean (risk, picking up fishing colleagues out of the ocean, some alive and some dead) I take a lot of offense to those comments by some people who only got their feet wet by visiting the beach.

Additionally, some of the independent shareholders had to sell their boats due to health, retirement, or maybe by not being able to make boat payments due to the processors always favoring their own vessels with large quotas. One thing they like to do is say we can't lease your clams but if you are willing to sell your allocation, at rock bottom prices, we'll take them off your hands. To some independent ITQ holders this becomes the only option and gives the processors more of their own allocation to control the industry.

I am sending this public comments anonymously due to the fact that I'm sure there would be retribution within the clam industry if I signed my name to it.

Thank you.

(Sent via *Mid-Atlantic Fishery Management Council*)