



Mid-Atlantic Fishery Management Council

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M E M O R A N D U M

Date: November 30, 2021
To: Council
From: Jessica Coakley, Staff
Subject: Atlantic Surfclam and Ocean Quahog (SCOQ) Species Separation Requirements

The following is included for Council consideration on this subject:

- 1) Draft white paper entitled, "Approaches to Address the Current Species Separation Requirements in the Atlantic Surfclam and Ocean Quahog Fisheries (November 2021)."
- 2) Fishery Management Action Team Meeting Summary (November 16, 2021)
- 3) SCOQ Committee Meeting Summary (October 15, 2021)
- 4) SCOQ Advisory Panel (AP) Meeting Summary (October 13, 2021)
- 5) Comment letter received on Great South Channel Habitat Management Area

The SCOQ AP/Committee is meeting jointly on December 6, 2021. A summary of their recommendations will be provided as supplemental material.

- 6) Recommendation from the Joint AP/Committee Meeting - Supplemental

**Approaches to Address the
Current Species Separation Requirements in the
Atlantic Surfclam and Ocean Quahog Fisheries**

**Prepared by the Surfclam and Ocean Quahog
Species Separation Requirements
Fishery Management Action Team (FMAT)**

November 2021

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1.0 Background

Industry has asked the Council to address issues related to the mixing of surfclam and ocean quahog in landings in the fishery. The current regulations do not allow for both surfclam and ocean quahog to be landed on the same trip or placed in the same cages - these are a result of the Individual Transferable Quota (ITQ) system which requires landings by species to be tracked separately. Industry noted that they currently avoid areas where species co-occur to the extent possible because mixed catches are undesirable, as processors can only process one species at a time. Furthermore, there is not an easy way to fully separate these species onboard and industry has indicated that onboard sorting by hand is not a desirable solution to this issue. Despite both regulatory and economic incentives to avoid mixed catches, industry has indicated that this issue needs to be addressed because cooccurrence (i.e., "commingling") of these clams is occurring more frequently, and it may become a larger problem in the future due to climate change. Appendix A provides an analysis of information available from the Northeast Fisheries Science Center clam survey, which also reinforces this notion.

These mixed landings of both surfclam and ocean quahog within ITQ tagged cages do create a monitoring issue. The commercial landings data are an important input to the stock assessment. They are assumed to be 100 percent accurate, and the stock assessment relies heavily upon the assumption that the landings reported in each of the tagged cages are not mixed. This presents challenges in terms of mixing allowance and how to address this issue without degrading any of the data streams or cross-checks in the data collection systems, to ensure that both commercial landings of each species are accurately tracked and that catch limits and accountability measures can be effectively applied. Regardless of stock status, it is important to accurately track the catch.

A Fishery Management Action Team (FMAT)¹ has been tasked with synthesizing information on this issue in the surfclam and ocean quahog fisheries, and the extent to which this has created concerns for the industry related to the current species separation requirements and existing regulations. Through this document, the FMAT will describe the extent of the mixing issue, how this relates to the current regulations and their enforcement, data collection related issues, and how it relates to industry operations and practices described by Council advisors and experts in the industry. The FMAT will also explore approaches to address the mixed landings issue - which will likely require an approach to separating and monitoring the catch somehow (e.g., manual separation, and/or through a manual sampling program or electronic monitoring (EM) system). This document will also summarize information available on different approaches, as well as some of the pros and cons, and general costs (with potential detailed costs to be later analyzed). It is possible that the recommendations made in this document could be addressed via regulatory action by NMFS or recommendations for new measures and regulations by the Council through an Amendment.

Cage Tagging Requirements

The surfclam and ocean quahog fisheries have been managed under an ITQ system since 1990. Each fishing year, the Greater Atlantic Regional Fisheries Office (GARFO) calculates the initial allocation of surfclam and ocean quahog for the next fishing year by multiplying the allocation percentage owned by each allocation owner by the total allowable catch for the fishing season. The total number of bushels of allocation for both surfclam and ocean quahog are divided by 32 (32-bushel cages; 60ft³ cages (1,700 L of cage volume)) to determine the appropriate number of cage tags to be issued to ITQ allocation owners. GARFO issues uniquely numbered cage tags corresponding to the owner's share of the allowed harvest at the beginning of the year.

After fishing has occurred and before offloading from the vessel, all cages that contain surfclam or ocean quahog must be tagged on or as near as possible to the upper crossbar of the cage. A tag is required for every 60 ft³, or portion thereof. A tag or tags must not be removed until the cage is emptied by the processor, at which time the processor must promptly remove and retain the tag(s) for 60 days beyond the end of the calendar year.

¹ FMAT members are Jessica Coakley (Council Staff- FMAT Chair), Brett Alger (NMFS OST), Daniel Hennen (NMFS NEFSC), José Montañez (Council Staff), Douglas Potts (NMFS GARFO - SFD), John Walden (NMFS NEFSC - SSB), John Sullivan (NMFS GARFO- APSD), and Sharon Benjamin (NMFS GARFO – NEPA).

VMS, Logbook, and Dealer Reporting Requirements

Mandatory reporting of landings (for vessel owners/operators) and purchase of clams (for dealers) is required. Vessel owners/operators report vessel catch using a clam logbook report (nearly all electronically) and dealers report clam purchases electronically. Cage tag numbers must be reported on both vessel logbook reports and dealer-processor reports and are used to cross-check logbooks between the vessels reports and the dealer reports. These landings data are then utilized in the stock assessment and are assumed to be accurate. Estimates of discards are based on area and effort expansion of observed trips (see Wigley et al., 2020) and are subject to the limitations imposed by observer coverage. It is worth noting that most of the commingling of surfclam and ocean quahog occurs at the deepest margin of surfclam distribution and may not overlap well with the limited number of observed trips in any given year.

Permitted surfclam and ocean quahog fishing vessels in the EEZ (i.e., those that hold a surfclam (SF 1) or an ocean quahog (OQ 6) open access permit) are also required to use a vessel monitoring system (VMS) at all times, except when a "VMS Power Down Exemption Request" has been granted. Prior to leaving port at the start of a fishing trip, the vessel's owner or operator must declare its intent to fish through the vessel's VMS and declare the target species for the trip (i.e., surfclam or ocean quahog).

There is no allowance for small amounts of the non-target species to be kept on board federally permitted surfclam and/or ocean quahog vessels that are part of the federal ITQ program.² In addition, unlike some other fisheries in the region, there is no "take home" or "consumption allowance" of surfclam or ocean quahog on these ITQ fishing trips.

Dealers are required to provide the unit of measure and amount by species being purchased. In the case of surfclam and ocean quahog, cage tag numbers must also be reported. A review of the dealer data indicated that no mixing is being reported. This means if a 32-bushel cage of surfclam is purchased, but only 30 bushels were surfclam, this creates an issue with data quality and reporting.

Industry members indicate that processing facilities are set up to handle either surfclam or ocean quahog only; or for processors that process both species, they are run one at a time through their processing lines. This is because processing facilities do not process mixed clam catches - each species is being processed for different market products. Non-target species are typically discarded at the facility because it is not feasible to store and transport them to another facility.

² Vessels fishing in state-only waters may have slightly different requirements; see individual state regulations for more details.

Onboard Vessel Sorting (History of)

The minimum size (shell length) regulation for the surfclam fishery was first established by Amendment 2 to the FMP (1979). That amendment implemented a 4.5” minimum size limit for surfclam. Surfclam beds were also to be closed to fishing when over 60 percent of the clams were under 4.5” in length and less than 15 percent were over 5.5” in length. Amendment 3 (1981) to the FMP implemented a 5.5” minimum size limit. Amendment 3 was not intended to secure sustainability of the resource as much as it was intended to assure a supply of large surfclam for breaded fried clam products (Marvin 1992). Some facilities producing clam strips have indicated a preference for larger size clams, for ease of hand shucking.

The 5.5” minimum size limit had been in place from 1982-1990 and was suspended because it led to high levels of discarded surfclam in the early years of implementation (1982-1986; ranged from 11.4 - 37.1 percent of landings discarded annually), although discard rates declined over time (1987-1991; ranged from 2.7 - 8.7 percent). The vast majority of those surfclam died because vessels used “sorting” machines which often damaged undersized clams as it routed them back overboard.

Since the suspension of the minimum size limit, the primary tool to minimize bycatch and bycatch mortality has been the design of a highly selective dredge. The fishery employs a steel hydraulic dredge that uses jets of water to fluidize the bottom sediment, thereby loosening the clams from their habitat. The bars of the dredge are spaced to retain larger surfclam and quahog and let the smaller ones, along with the bulk of unwanted fish and invertebrates, and other unwanted debris, pass through. After tows ranging from several minutes up to an hour the dredge is retrieved, the material is run through a shaker to remove rocks and shells (but not the clams), then dumped onto a belt, and the harvested clams are then discharged into steel cages on the vessel. This process is repeated until the vessel has completed its operations. The gear itself is not able to sort the two clam species of the selected size; therefore, both are retained in the dredge and appear on the belt.

At present, sorting machines to separate surfclam from quahog are not used, but there is some hand sorting that is done on the conveyor belt on the vessels after the dredge is retrieved and clams are moved to the cages. When a mixed dredge is retrieved, the crew try to separate the material as fast as possible. Because of the speed of the belt, it is not possible for all the species and material to be separated and it is not possible to separate all the surfclam or ocean quahog bycatch. As noted above, this mixed composition is not captured in the logbook data or the dealer data.

Biological Sampling

Biological sampling by port agents (or contractors applicable) is conducted to collect data for the surfclam minimum size analysis required in the regulations. Only surfclam is sampled - not ocean

quahog. This sampling is done sometimes by walking on top of the cages or a narrow ledge above the cages while they are still on board the vessels, or when the cages are offloaded. Cages are not dumped to obtain surfclam samples as tags cannot be removed to take samples. Samples are obtained by grabbing a few random surfclam off the top of the cage. Port agents have indicated they can see both surfclam and ocean quahog in these top layers of the cages on visual inspection. Obtaining required biological samples can be further hindered by weather and inability of samplers and boat captains to coordinate sampling activity. Some limited biological sampling is performed inside the processing facilities (e.g., samples are taken from coolers). However, this is not a widespread practice. In addition, there is limited observer coverage in this fishery (less than 3%) which indicates that surfclam are a top discard on quahog trips and vice versa, although the majority of each trip is comprised of the target species.

Port of Landing to Processor

As described above, surfclam and ocean quahog may not be landed without appropriate tags attached to all cages containing surfclam or quahog. When cages are landed, they must be transported to a dealer/processing facility without removing the cage tags (unless landed at a processing facility). Cages are loaded onto a truck immediately to avoid clam damage, and this can create difficulty in conducting necessary sampling, in part due to the very large sizes of the cages and inability to access contents.

Law Enforcement

Enforcement in the SCOQ ITQ program relies heavily on shoreside surveillance. As previously indicated, to establish a chain of evidence adequate for enforcement of the SCOQ ITQ program from the vessel to the processor, all surfclam and ocean quahog cages must be tagged before the winch cable is disconnected from the cage on the dock, and tags must not be removed until cages are emptied at the processing plant. Cross-checking logbooks between vessels and processors also provides a system to double check the information reported. ITQ allocation permits may be suspended, revoked, or modified by NMFS for violations of the FMP.

Law enforcement officers may inspect cages once they are offloaded from fishing boats to verify that tags are attached to the cages. However, cages are not inspected to determine if surfclam and ocean quahog are mixed in the cages as this would require that the entire contents of the cages be dumped out. Dumping animals out of the cage would be a messy process, create difficulties with refilling the cages, and potentially kill many of the clams (catch loss). Fishing vessels are not required to report to law enforcement when they are coming back to port unless they have fished in a paralytic shellfish poisoning (PSP) area of concern; therefore, vessels are only inspected when they are spotted on the VMS system or when they are visually seen reaching port.

2.0 Key Issues

- There are challenges with accounting for mixing in cages. If mixing were to be allowed, the clams must be sorted at some point: either manually, visually, or electronically. At this point, each cage is assumed to be 100% one clam species or the other when tagged.
- Processors do not want mixed cages for processing, as product lines for each species are different and some processors only process one species. Live clams have a limited shelf life, therefore, storing and saving non-target species and/or transporting them to other processing lines is not feasible.
- Captains/vessels don't want mixed cages because it is undesirable for the processors for whom they land clams. In addition, landing mixed species may impact vessel profitability.
- Tagged cages of clams cannot easily be dumped for sorting once filled. They are extremely large and heavy. Dumping out clams for sorting would be time consuming, as they are difficult to refill, and it creates the potential for mixing between cages/tags.
- The stock assessment relies heavily on the bushels of clams for each species reported by cage. At present, those cages erroneously are assumed to be 100 percent clean and unmixed for each species.
- Catch limits and accountability measures rely heavily on accurate reporting of the logbook catch. In addition, the dealer data is utilized as a crosscheck on the logbook reporting.
- Surfclam distribution has been shifting northward and further offshore, and increased mixing has been occurring (Appendix A); this may continue as the ocean continues to warm. This makes static assumptions about the extent of mixing challenging (i.e., ongoing monitoring will be required).
- Contents of cages are currently not inspected by enforcement, nor is any biological sampling of the entire cage occurring (i.e., only a few surfclam taken from perimeter/top for sampling). Therefore, even though it is required that the contents be 100% of the tagged species, no one from enforcement or other sampling program is presently checking cage contents.
- There are large differences between the size of vessels harvesting, the processing operations at different facilities, and what each of the handful of processors may consider to be feasible. Some fishing industry representatives have indicated that onboard sorting beyond what is currently done would be an undesirable outcome because it is labor intensive and challenging on deck. Others have indicated sorting on board may be feasible.

3.0 Potential Solutions

Table 1 provides a high-level description of potential solutions to the species separation issue, including some advantages, disadvantages, and other issues. The FMAT incorporated early input from the Atlantic Surfclam and Ocean Quahog Advisors and Committee members when developing these solutions.

Table 1. Summary of potential solution to the species separation regulatory issue.

ID #	Potential Solutions*	Overview	Additional Monitoring/Sampling**	Additional Enforcement**	Other Reg. Details	Advantages	Disadvantages	Other Issues	Amendment
1	<p><u>No Council Involvement</u> (Industry Solves Issue with GARFO)</p>	<p>GARFO must ensure regulations are followed and enforced. Only one target species (SC or OQ) are landed on each trip, and cage contents are 100% that target clam species. Industry and GARFO figure it out.</p>	<p>Depends on solution agreed upon between GARFO and industry.</p>	<p>Depends on solution agreed upon between GARFO and industry.</p>	<p>TBD</p>	<p>Allows for precise ITQ catch accounting, and consistent with assumption that 100% of cage contents are as tagged for each species. Vessels only land one species per trip, which is appealing to processors.</p>	<p>Given species mixing and data quality issues, additional monitoring/sampling and/or enforcement levels may be required by GARFO to ensure regulation are followed. Discards of non-target clam species will need to be reported and monitored.</p>	<p>SCOQ Committee commented that the industry specifically asked the Council to address this issue.</p>	<p>No</p>
2	<p>Modify Regulations to <u>Require Onboard Sorting</u>; Maintain current regs of <u>No Mixed Trips</u></p>	<p>Require onboard sorting and removal of non-target clams from vessel before cages are filled (i.e., while on belt), to ensure only target species are landed on a trip, and all vessel cages are 100% target clam species.</p>	<p>No additional onboard sampling beyond current observer coverage</p>	<p>Likely require some kind of enhanced validation/enforcement to ensure cage contents are 100% target on trips.</p>	<p>Would not change current declaration process for either SC or OQ trips; no mixed trips allowed.</p>	<p>Allows for precise ITQ catch accounting, and consistent with assumption that 100% of the cage contents are as tagged for each species. Vessels only land one species per trip, which is appealing to processors.</p>	<p>Difficult to manually sort effectively on board; may need to slow down fishing operations to fully sort catch. High expected discard mortality for clams tossed overboard. Some beds may become economically un-fishable.</p>	<p>Some advisors indicated that onboard sorting is not feasible. Other advisors indicated that some onboard sorting is performed to remove undesirable species and trash and suggested sorting each species onboard is feasible.</p>	<p>Likely yes</p>

* Some of these alternatives may result in increased costs to GARFO and/or the industry, depending on the solution identified.**Intercepting vessels on arrival to port, or at processing facilities, to verify and/or sample cage contents would be time consuming and logistically challenging (both for monitoring and/or enforcement).

ID #	Potential Solutions*	Overview	Additional Monitoring/Sampling**	Additional Enforcement**	Other Reg. Details	Advantages	Disadvantages	Other Issues	Amendment
3	Modify Regulations to <u>Require Onboard Sorting and Allow Mixed Trips</u>	Allow for trips that land both species. Require onboard sorting and separation of clams by species when cages are filled.	No additional onboard sampling beyond current observer coverage.	Likely require some kind of enhanced validation/enforcement to ensure cage contents are either 100% surfclam or 100% ocean quahog, or a trip is being fished as declared.	Would change current declaration process to either SC, OQ or Mixed trips allowed. Cages must be tagged as a surfclam cage or an ocean quahog cage.	Allows for precise ITQ catch accounting, and consistent with assumption that 100% of the cage contents are as tagged for each species.	Difficult to manually sort effectively on board; may need to slow down operations to fully sort catch. Vessels may land two species per trip, which is unappealing to processors. Non-target clams may be discarded at processors. Impacts may vary by vessel size as smaller vessels/smaller processors may have an easier time adapting to sorting.	Cell I2 applies here. Industry indicated that non-target species (such as quahog mixed in surfclam cages) are trashed at surfclam only processing facilities - not all facilities process both species. Infeasible to put a cage or two of the undesired species to truck elsewhere.	Likely yes
4	Modify Regulations to <u>Allow for Mixing</u> (up to X% non-target) within Cages on Vessels <u>without Additional Monitoring</u>	Allow mixing of clam species within cages up to X% (e.g., 10%).	No onboard sorting, and no additional monitoring required.	Likely require some kind of enhanced validation/enforcement to ensure the percentage is not exceeded.	Would change current declaration process to either SC, OQ or Mixed trips allowed. Cages must be tagged as a surfclam cage or an ocean quahog cage.	This would address industry concerns about enforcement of mixed species in cages. Industry first proposed this as a potential solution so presumably supports it.	Having an unknown percentage of mixing within cages impacts the stock assessment and degrades ITQ catch accounting. Very difficult to enforce; contents of cages are currently not inspected by enforcement, nor is any biological sampling occurring of the entire cage (i.e., only a few surfclam taken from perimeter/top for sampling). Dumping cage contents to sort and assess mixed percentage by enforcement or samplers is challenging.	Industry provided comments on past enforcement history of minimum size in 1990s - enforcement would dump 1 cage and if too many small clams assumed all cages on trip not compliant.	Likely no (may not require an amendment; Council could potentially request NMFS implement).
<p>* Some of these alternatives may result in increased costs to GARFO and/or the industry, depending on the solution identified.**Intercepting vessels on arrival to port, or at processing facilities, to verify and/or sample cage contents would be time consuming and logistically challenging (both for monitoring and/or enforcement).</p> <p>Additional Questions for Alt 4: Would tagging be based on majority of cage contents? Are non-target clam species counted as discards? Do we assume maximum mixing allowance (i.e., 10% for stock assessment discard - implications? Is this in addition to incidental mortality of 5% for quahog and 12% for surfclam? If processor trashes non-targets, assume 100% mortality?</p>									

ID #	Potential Solutions*	Overview	Additional Monitoring/Sampling**	Additional Enforcement†**	Other Reg. Details	Advantages	Disadvantages	Other Issues	Amendment
5	Modify Regulations to <u>Allow for Mixing</u> (up to X% non-target) within Cages on Vessels with <u>Manual Onboard Monitoring</u>	Allow mixing of clam species within cages, with onboard manual monitoring to assess catch composition.	Manually inspect and sample cages onboard vessels and record catch composition. Will require some type of enhanced at-sea sampling program to get representation catch data (e.g., observer?)	May require some kind of enhanced validation/enforcement to ensure the percentage is not exceeded.	Would change current declaration process to either SC, OQ or Mixed trips allowed. Cages must be tagged as a surfclam cage or an ocean quahog cage.	Allows for precise/accurate ITQ catch accounting of the mixed landings.	Manual onboard monitoring may be challenging depending on vessel/deck configuration and pace of operations. Would require a carefully designed, representative sampling system. An allowance for a fixed percent mixing will likely be totally unenforceable at sea and very difficult to enforce at the dock	Would any additional mortality need to be accounted for in the specs process? What about ITQ allocations and plants that process the non-target clams - how to account for that? Do we even need to set a percent if we have adequate monitoring for these next alternatives? What level of monitoring is needed to be precise/accurate - 100%?	Maybe
6	Modify Regulations to <u>Allow for Mixing</u> (up to X% non-target) within Cages on Vessels with <u>Electronic Onboard Monitoring</u>	Allow mixing of clam species within cages, with onboard electronic monitoring (EM) to assess catch composition.	Electronically inspect material on "belt" prior to filling cages, and record catch composition.	May require some kind of enhanced validation/enforcement to ensure the percentage is not exceeded.	Would change current declaration process to either SC, OQ or Mixed trips allowed. Cages must be tagged as a surfclam cage or an ocean quahog cage. Would need new regulations related to EM.	Allows for precise/accurate ITQ catch accounting of the mixed landings. Existing electronic recording technology may be easily adapted. Clam fleet is small and vessels have unobscured belt that can easily be surveyed electronically, without capturing confidential details or interfering with fishing operations.***	Initial cost may be high and there may be associated data storage costs. Impacts could occur on rate of operations and costs of at sea monitoring. Non-real time EM monitoring would likely be lower cost, than real-time approaches.	There may be resistance to adopting new monitoring technologies or concerns with proprietary information being provided. There may be cost offsets related to early technology adoption/research to develop and implement this technology.	Likely yes
<p>* Some of these alternatives may result in increased costs to GARFO and/or the industry, depending on the solution identified.**Intercepting vessels on arrival to port, or at processing facilities, to verify and/or sample cage contents would be time consuming and logistically challenging (both for monitoring and/or enforcement). ***EM approaches could support large-scale, ongoing data collection on catch of both surfclam and ocean quahog. This could include the collection of length data to support the length-based stock assessment. The technology could be utilized in a way that allows for video review later for accounting purposes, or in real time that be shared in a timely manner to the fishing fleet, or to the captain onboard the vessel, to avoid areas where large amounts of mixing exist. Electronic recording may be easily installed to avoid interfering with any onboard fishing operations. Could create long-term cost advantages and may reduce or eliminate need for length sampling by port samplers. Industry in other regions have played large role in implementation of EM solutions. Information can easily be kept confidential. May be issues with who runs and maintains programs, data, etc. Would need to make decisions about recording at sea and/or running through AI program at sea in real time.</p>									

ID #	Potential Solutions*	Overview	Additional Monitoring/Sampling**	Additional Enforcement**	Other Reg. Details	Advantages	Disadvantages	Other Issues	Amendment
7	Modify Regulations to <u>Allow for Mixing</u> (up to X% non-target) within Cages on Vessels with <u>Manual Port Monitoring</u>	Allow mixing of clam species, with additional port monitoring to assess catch composition.	Manually inspect and sample cages on arrival at the port, and record catch composition.	Likely require some kind of enhanced validation/enforcement to ensure the percentage is not exceeded.	Would not change current declaration process for either SC or OQ trips; no mixed trips allowed. Non-target species counted as discards. New program would need new regulations.	Allows for precise/accurate ITQ catch accounting of the mixed landings.	Would require a carefully designed, representative sampling system. Port samplers would need to intercept vessels at the dock to process cage contents (labor intensive). May impact port operations.	Dumping cages and refilling cages for any purpose is challenging. Likely will require a brand new sampling program - industry funded?	Likely yes
8	Modify Regulations to <u>Allow for Mixing</u> (up to X% non-target) within Cages on Vessels, with <u>Manual Processing Facility Monitoring</u>	Allow mixing of clam species, with manual processing facility monitoring to assess catch composition.	Manually inspect and sample cages prior to processing, and record catch composition.	Likely require some kind of enhanced validation/enforcement to ensure the percentage is not exceeded.	Would change current declaration process to either SC, OQ or Mixed trips allowed. Cages must be tagged as a surfclam cage or an ocean quahog cage. New program would need new regulations.	Allows for precise/accurate ITQ catch accounting of the mixed landings. Only a handful of processors (fewer locations to sample).	May likely require a substantial amount of labor to assess catch composition.**	Industry has indicated that facilities are not set-up for sampling - not the space to dump and sort cages, etc. Likely will require a brand new sampling program - industry funded?	Likely yes

* Some of these alternatives may result in increased costs to GARFO and/or the industry, depending on the solution identified. **Intercepting vessels on arrival to port, or at processing facilities, to verify and/or sample cage contents would be time consuming and logistically challenging (both for monitoring and/or enforcement).

ID #	Potential Solutions*	Overview	Additional Monitoring/Sampling**	Additional Enforcement**	Other Reg. Details	Advantages	Disadvantages	Other Issues	Amendment
9	Modify Regulations to <u>Allow for Mixing</u> (up to X% non-target) within Cages on Vessels, with <u>Electronic Processing Facility Monitoring</u>	Allow mixing of clam species, with electronic processing facility monitoring to assess catch composition.	Electronically inspect cage contents prior to processing, and record catch composition.	Likely require some kind of enhanced validation/enforcement to ensure the percentage is not exceeded.	Would change current declaration process to either SC, OQ or Mixed trips allowed. Cages must be tagged as a surfclam cage or an ocean quahog cage. Would need new regulations related to EM program.	Allows for precise/accurate ITQ catch accounting of the mixed landings. Existing electronic recording technology may be easily adapted. Only a handful of processors (lower cost EM solution), and creates fewer logistical challenges.***	Initial cost may be high and there may be associated data storage costs. Non-real time EM monitoring would likely be lower cost, than real-time approaches.	Industry has indicated that materials on processing belts can be up to 8 inches thick (not feasible for EM). Would need to dump one cage at a time, associate a tag with cage, and separate enough to see the catch. Similar to I6 above, there may be resistance to adopting new technologies but there may be cost offsets related to early technology adoption/research	Likely yes

* Some of these alternatives may result in increased costs to GARFO and/or the industry, depending on the solution identified. **Intercepting vessels on arrival to port, or at processing facilities, to verify and/or sample cage contents would be time consuming and logistically challenging (both for monitoring and/or enforcement). ***EM approaches could support large-scale, ongoing data collection on catch of both surfclam and ocean quahog. This could include the collection of length data to support the length-based stock assessment. The technology could be utilized in a way that allows for video review later for accounting purposes, or in real time that be shared in a timely manner to the fishing fleet, or to the captain onboard the vessel, to avoid areas where large amounts of mixing exist. Electronic recording may be easily installed to avoid interfering with any onboard fishing operations. Could create long-term cost advantages and may reduce or eliminate need for length sampling by port samplers. Industry in other regions have played large role in implementation of EM solutions. Information can easily be kept confidential. May be issues with who runs and maintains programs, data, etc. Would need to make decisions about recording at sea and/or running through AI program at sea in real time.

4.0 Recommendations to the Council (Next Steps)

FMAT Recommendation:

The FMAT incorporated input from the October 13 and 15, 2021 Atlantic Surfclam and Ocean Quahog Advisory Panel and Committee Meetings, respectively, into Table 1 above before their meeting on November 17, 2021.

Feedback from industry advisors indicated that they wanted the ability to land mixed trips of surfclam and quahog, and or mixed cages, but were not generally supportive of any monitoring or enforcement approaches that would interfere with their operations. It was clear based on the potential solutions under consideration by the FMAT, that changes to fishing and/or processing operations would be needed to accurately monitor the mix of catch that is presently occurring and is likely to continue to occur (perhaps to a greater extent) in the future due to climate change. The FMAT was supportive of finding a long-term solution to the current inaccurate account for all clam catch, and therefore supportive of the development of technologies and the potential for EM to provide a more permanent and adaptive solution that may actually enhance data collection in the future.

The FMAT also discussed area-based approaches. For example, the FMAT discussed the possibility of closing designated geographic areas to fishing due to high levels of clam mixing, and/or requiring that vessels fishing in specific areas designated as "high mixing areas" be subject to additional monitoring and/or regulations. However, due to the lack of information about the level of mixing across the entire region, how it may be changing, and mixing at the scale of fishing operations (individual clam beds and tow by tow) which may be very heterogeneous, the FMAT did not consider these strategies feasible to implement. In addition, industry has generally not been supportive in the past of area-based approaches such as those under the small clam closure regulations (which were last applied by the Council/NOAA in the 1990s), because of challenges with getting areas reopened in a timely manner.

Given differences in operations for individual vessels and processors, the FMAT could not identify one solution that would address this issue comprehensively. Any approach would require support of the individual vessels and processors and substantial development work. The FMAT recommends that the mixing issue be addressed under a research and development (R&D) type approach (such as an Exempted Fishing Permit (EFP)), as impacted segments of the clam industry can develop feasible solutions while minimizing impacts to their business models and operations. GARFO can then consider the feasibility of these approaches more broadly for the entire industry and consider broader regulatory changes. This is consistent with Option 1 (Table 1). To incentivize participation in R&D, the FMAT recommends that the trip/cage mixing requirements could be suspended under an EFP for participating permitting vessels if specific data collection/monitoring

criteria are met. The FMAT recommends that any research conducted under an EFP must incorporate a robust, feasible long-term catch monitoring component. The FMAT recommends that monitoring strategies presented in Table 1 (Options 5-9) be considered in the development of any mixed clam R&D. Appendix B provides a summary of the types of research permits.

Committee Recommendation: This section contains any proposed recommendations after the Dec. 6 meeting is complete. TBD

5.0 References

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Appendix A

Co-occurrence of Atlantic surfclam and ocean quahog in the NEFSC clam survey

Warming oceans have led to shifts in Atlantic surfclam distribution (Hoffman et al., 2018). In general, Atlantic surfclam in the southern area (S. Virginia to S. New England) have shifted to deeper water (Figure 1). This has in turn, led to more overlap in habitat between Atlantic surfclam and ocean quahog.

In the 2016 stock assessment for Atlantic surfclam (NEFSC, 2016), logistic regression models were used to detect trends in the probability of co-occurrence (surfclam and ocean quahog taken in the same tow) in NEFSC clam surveys during 1982-2011. Survey data collected after 2011 were not included because they involved different survey gear and because too few survey years were available for independent use. Only data from successful random tows were used. Poorly sampled strata with > 2 missing years were omitted (Figure 2).

Results indicated that the probability of co-occurrence increased over time for the New Jersey (NJ) and Long Island (LI) regions of the southern area. Over the period covered by this analysis (<2012), the two increasing regions, NJ and LI, accounted for approximately 80% of the total landings.

In the years following the end of this analysis, the NEFSC clam survey shifted to a different and far more efficient vessel (2012) and re-stratified (2018). Those two changes make it difficult to directly compare recent years to the previous analysis. Rather than attempt to account for the changes in selectivity and capture efficiency that result from a change in survey vessel, and the spatial biases that result from re-stratification, a separate analysis was developed for recent years.

There have not been enough survey years in the southern area using the new survey vessel to create a meaningful time series. It is, however, possible to make inference based on the magnitude of co-occurrence without reference to trends over time.

All tows from 2012 to 2018 (the last complete year of sampling) were analyzed for catch composition. Tows that caught less than 30 surfclam in five minutes were excluded as these represent densities far below what would be considered economically for commercial fishing viable (Powell, et al., 2015). A tow in which at least 5% of the total catch by number was ocean quahog was considered co-occurrence, and less than that proportion was considered a 'surfclam only' tow. Both of these values are conservative and could be reduced, which would tend to lead to higher values of co-occurrence in the results.

The three Atlantic surfclam strata with sufficient tows meeting the 30 animals per 5 five minutes criteria were 3S, 4S and 5S (Figure 3). The proportion of tows in which co-occurrence was observed ranged between about 10% in 5S to over 80% in 4S. The most productive and heavily sampled strata, 3S, showed about 50% co-occurrence.

It is worth noting that the areas in which high co-occurrence was observed (3S and 4S) are also the areas where co-occurrence would be expected since these are the deeper Atlantic surfclam strata in which ocean quahog have traditionally been found. It is, however, equally important to note that only three of the six southern area Atlantic surfclam strata had sufficiently high densities of surfclam aggregations to warrant inclusion in this analysis. These two points reinforce the notion that Atlantic surfclam distribution is shifting into deeper water and that co-occurrence with ocean quahog is already common and likely to increase as ocean temperatures increase.

Literature Cited

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Northeast Fisheries Science Center. (2016). In: 61st Northeast Regional Stock Assessment Workshop (61st SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent RefDoc. 16-13; 26 p. <http://www.nefsc.noaa.gov/publications/Northeast> Fisheries Science Center. Report of the 61st Northeast Regional Stock Assessment Workshop (61st SAW). a. Atlantic surfclam. TechnicalReport NEFSC Ref. Doc. 17-05, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543-1026, 2017.

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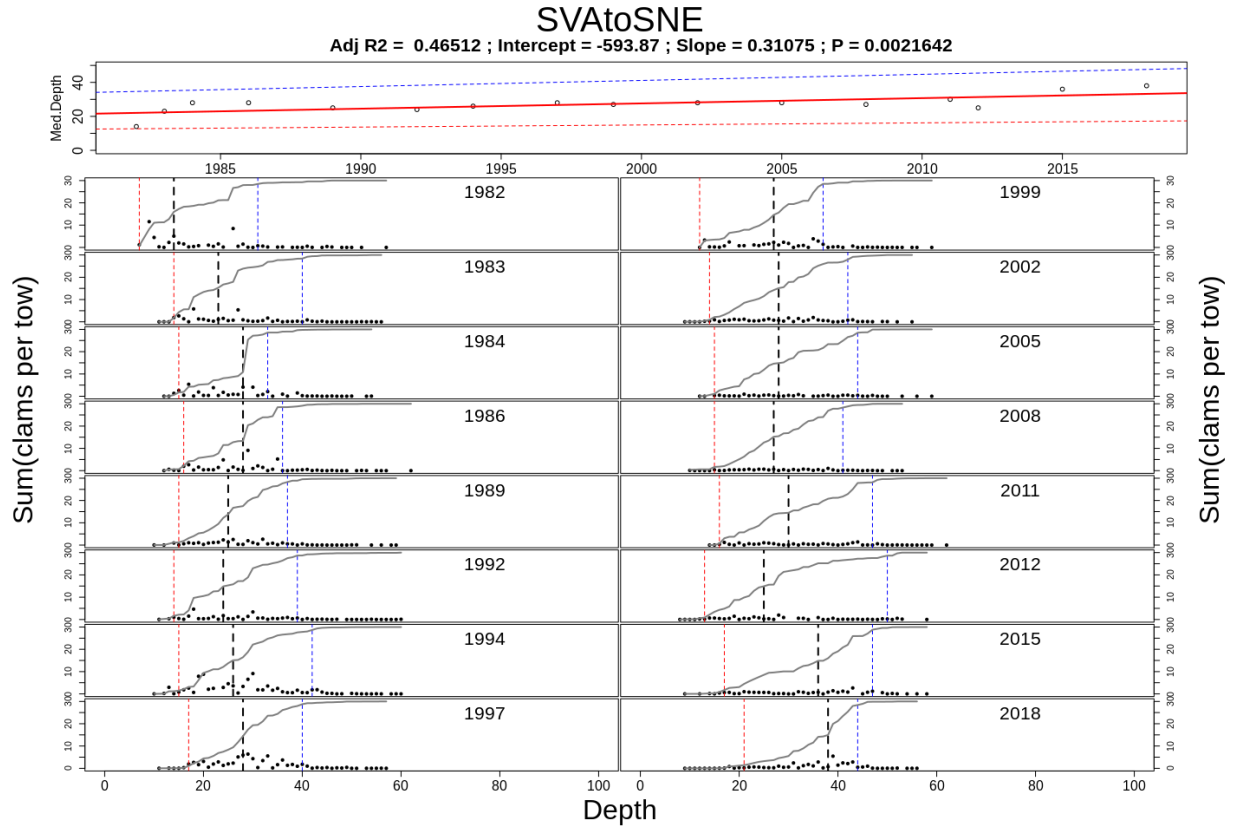


Figure 1. Total surfclam caught at depth by year in SVA to SNE. The points are clams caught aggregated by depth and the gray line is the cumulative sum of clams caught at depth. The black dashed vertical line is the depth at which half of the cumulative total clams caught in that survey were taken. If the black dashed vertical line is further to the right, it indicates that more clams were caught in deeper water in that year. The red and blue dashed vertical lines represent the 5th and 95th percentiles of the cumulative total. The top panel is a simple linear regression of median depth (the black dashed vertical lines in each annual plot) over time. A positive slope indicates that a higher proportion of the total clams in a region were caught in deeper water in recent years.

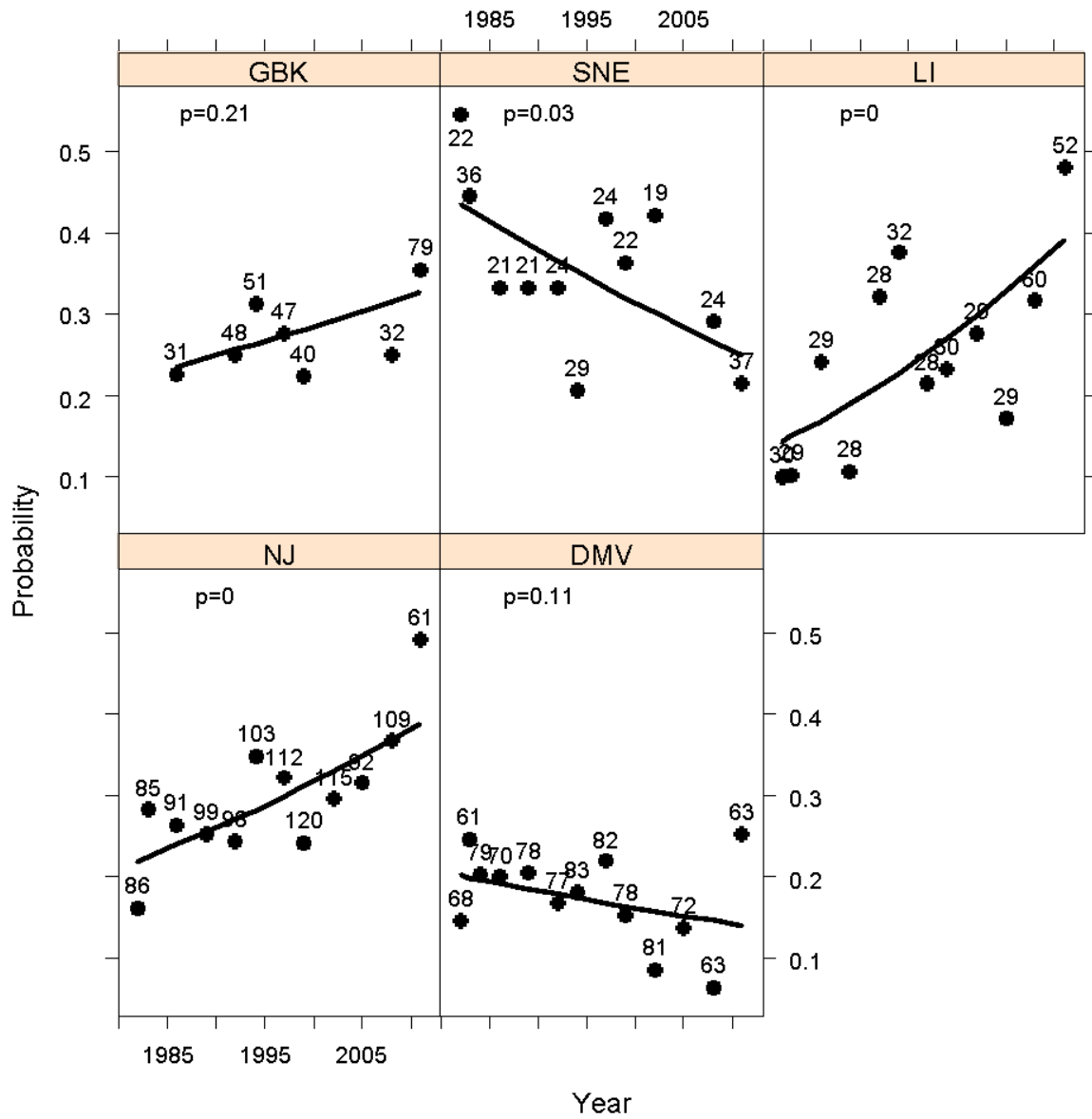


Figure 2. Trends in co-occurrence of surfclam and ocean quahog by region with p-values from a logistic regression (top of each panel) and sample sizes in each year.

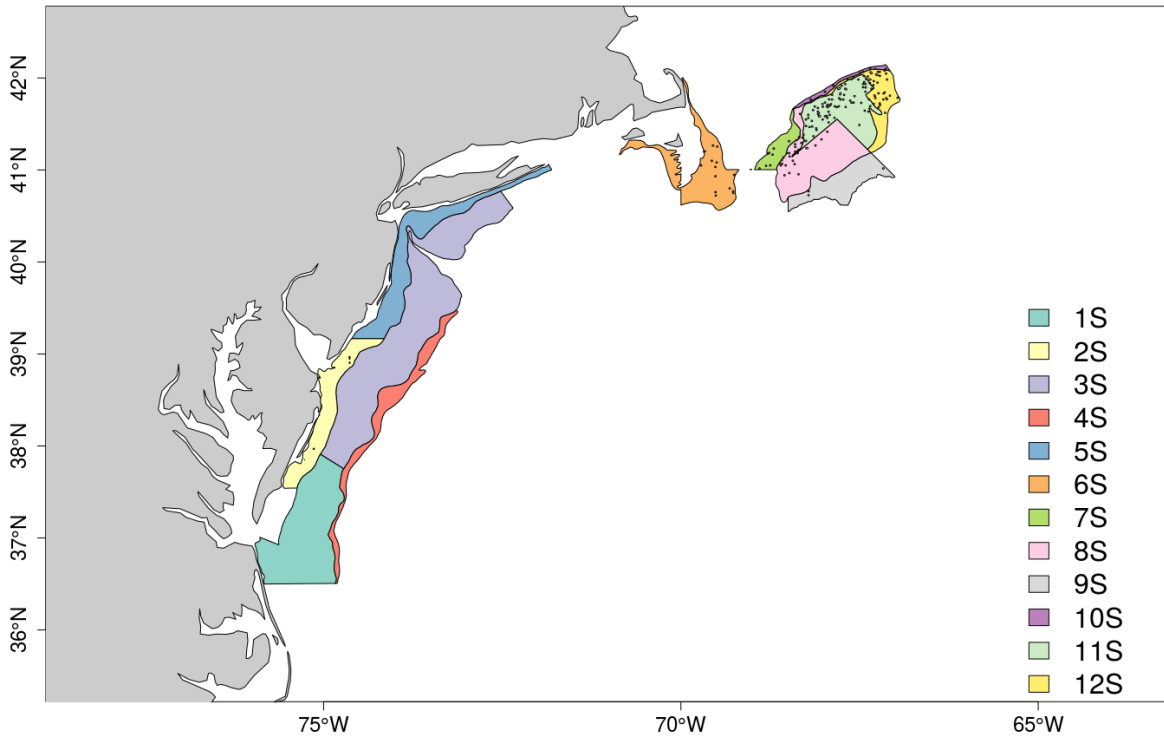


Figure 3. Atlantic surfclam strata used in the NEFSC clam survey. The southern area strata are 1 – 6S.

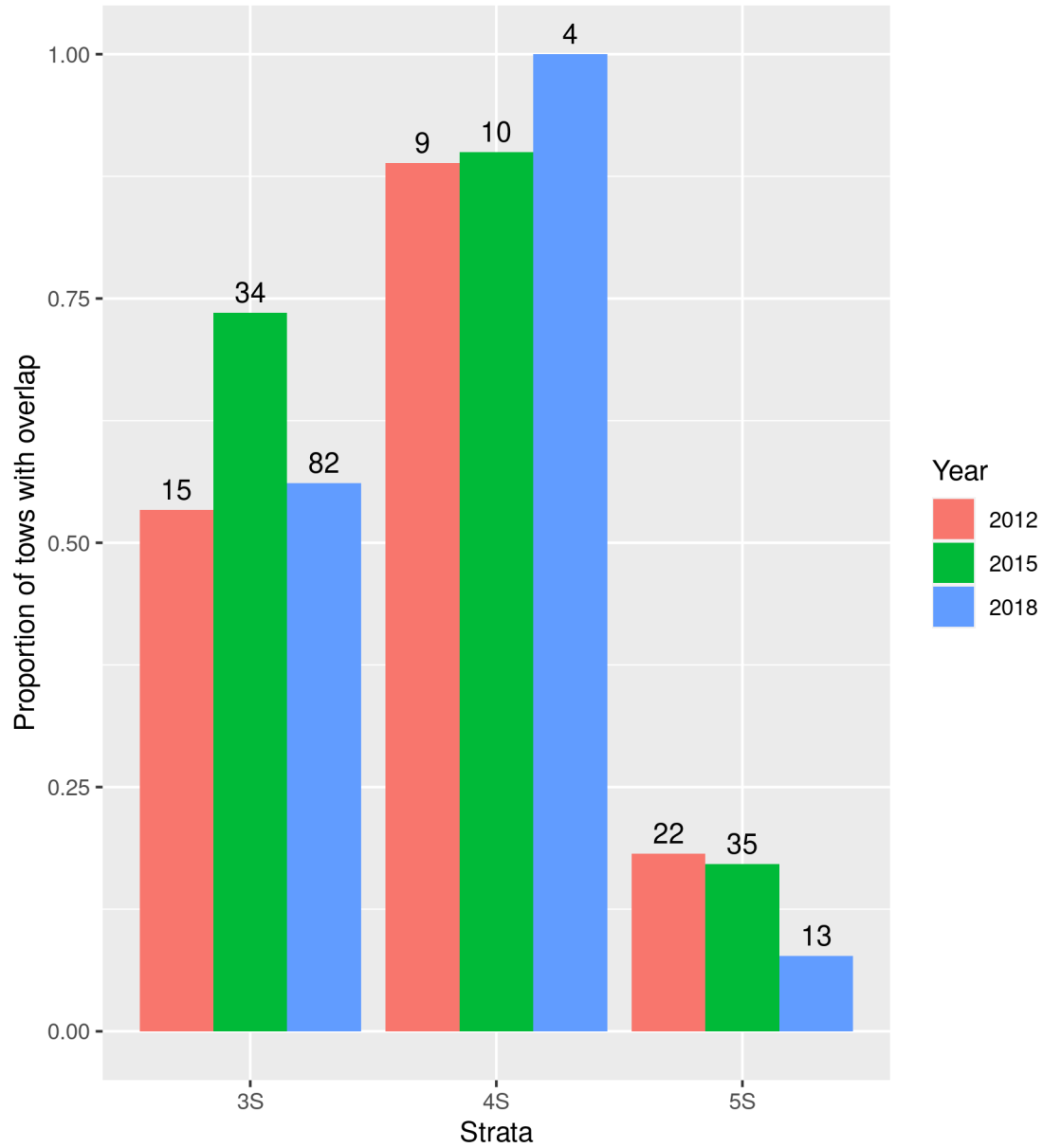


Figure 4. Proportion of all tows with 30+ total Atlantic surfclam containing at least 5% ocean quahog by number. Sample sizes are printed above each bar. Other strata in the southern area did not have sufficient tows that captured more than 30 surfclam to be included in this analysis.

Appendix B

Types of Research Permits

Undertaking scientific research on regulated fisheries may require special permits, as required by experimental fishing regulations established under the Magnuson Stevens Fishery Conservation and Management Act (Magnuson Act). There are three main permit types for exemption from Greater Atlantic Region fishery regulations, and an acknowledgement letter that may be applicable to scientific research being conducted:

- Exempted Fishing Permit (EFP),
- Temporary Possession Letter of Authorization,
- Exempted Educational Activity Authorization (EEAA), and
- Letter of Acknowledgment (LOA).

Description of Exempted Fishing Permits

From <https://www.fisheries.noaa.gov/new-england-mid-atlantic/sustainable-fisheries/scientific-research-and-exempted-fishing-permits>

"Online applications are submitted through our [Fish Online](#) portal. For help with Fish Online, please contact our Helpdesk at (978) 281-9188. We will contact you after you submit your application so you know who is processing your request."

Exempted Fishing Permit

An Exempted Fishing Permit (EFP) is a permit issued by the Greater Atlantic Regional Fisheries Office (Regional Office) that authorizes a fishing vessel to conduct fishing activities that would otherwise be prohibited under the regulations at 50 CFR part 648 or part 697. Generally, EFPs are issued for activities in support of fisheries-related research, including landing undersized fish or fish in excess of a possession limit for research purposes, seafood product development and/or market research, compensation fishing, and the collection of fish for public display. Anyone that intends to engage in an activity that would be prohibited under these regulations (with the exception of scientific research on a scientific research vessel, and exempted educational activities) is required to obtain an EFP prior to commencing the activity.

Review Timeline

An EFP application should be submitted at least 60 days before the desired effective date. If you submit your EFP application less than 60 days before needed, you may not receive it in time. Please make sure you have submitted all of the required material in your initial application. Our 60-day target for processing EFP applications does not begin until we have a complete application. Applicants should also be aware that large scale projects, projects with uncertain resource impacts, or controversial exemption requests may take longer than 60 days to process.

Application Review and Issuance

The Regional Administrator will review each application and make a preliminary determination on whether the application contains all of the required information and constitutes an activity appropriate for further consideration. If the Regional Administrator finds that any application does not warrant further consideration, both the applicant and the affected Council(s) will be notified in writing of the reasons for the decision. If the Regional Administrator determines that an application warrants further consideration, notification of receipt of the application will be published in the Federal Register with a brief description of the proposal. There will be a 15- to 45-day comment period on the notice of receipt of the EFP application.

As soon as practicable after considering comments and conducting required analyses and consultations (e.g., NEPA, EFH, ESA and MMPA), the Regional Administrator will make a determination on whether to approve or deny the EFP request.

If approved, the Regional Administrator will attach terms and conditions to the EFP, consistent with the purpose of the exempted fishing and as otherwise necessary for the conservation and management of the fishery resources and the marine environment. EFP recipients and vessel operators must sign the EFP acknowledging the terms and conditions, and are responsible for adhering to these terms and conditions. Failure to do so may result in permit revocation.



**Current Species Separation Requirements in the
Atlantic Surfclam and Ocean Quahog Fisheries
Fishery Management Action Team (FMAT) - Meeting Summary
November 2021**

The Mid-Atlantic Fishery Management Council's (Council) Atlantic Surfclam and Ocean Quahog (SCOQ) Species Separation Requirements FMAT met via webinar on November 16, 2021, to review the draft document entitled, "Approaches to Address the Current Species Separation Requirements in the Atlantic Surfclam and Ocean Quahog Fisheries," (white paper) as well as meeting summaries from the Advisory Panel (AP) and Committee meeting summaries from meetings held in October 13 and 15, respectively, to incorporate input.

FMAT members present: Jessica Coakley (Council Staff - FMAT Chair), Brett Alger (NMFS OST), Daniel Hennen (NMFS NEFSC), José Montañez (Council Staff), Douglas Potts (NMFS GARFO - SFD), John Walden (NMFS NEFSC - SSB), John Sullivan (NMFS GARFO- APSD), and Sharon Benjamin (NMFS GARFO – NEPA)

Others present: David (no last name provided)

Staff reviewed the meeting agenda, objectives, and need for this action. The FMAT reviewed comments provided in the AP and Committee meeting summaries. No major edits were made to the documents the FMAT initially reviewed, except to the options table and appendices, which addressed much of the input from the AP and Committee. An exempted fishing permit (EFP) appendix was incorporated into the white paper because of the discussion from the Committee meeting. The timeline for future work was also discussed, as the Council will discuss this in December.

The FMAT discussed the spatial extent of the mixing issue. Have we thought of closing areas where this mixing is high - to avoid the issue mixing completely? Area-based approaches were discussed, where the areas could either be closed or have different sets of regulations within an area. The survey does provide some insight into the extent of the problem, although the data is limited - this data will be added to the white paper. The observer coverage is very limited. The mixing of both species in clam beds is a big problem - there are very few tows at this point that are just surfclam. Also, area-based closures could concentrate effort into weaker areas of the stock (like further north) and deplete those areas.

Based on the input received thus far, the fishing fleet generally does not seem to have a desire to separate the catch in a way that modifies their current operations. Some advisors indicated that there is some sorting done - they may not be able to get everything done but a good effort is going on to get rid of the non-targets (onboard or in processor - neither of which is presently being

recorded/documented). Other individuals have indicated that sorting is not possible. This may reflect difference in the size and specifics of each industry operation. Furthermore, the processors do not want to receive a mixed catch since most only process one species or run a single species processing line at a time to fulfill contracts. We need an upstream approach to address this issue - some of these solutions may be short-term (2-5 year) fixes, while others may be longer term. This should be an important consideration for the Council - given the trajectory of this issue and the potential for it to continue to change going forward, it may be better to focus on longer term solutions.

In the clam industry, there is a high level of vertical integration, and fishermen work for the processing plants to meet their demands for the desired species. They are generally going where the processors tell them to go. Haul level data would be very important to assess and monitor mixing in the catch. Trying to close areas where mixing occurs would probably make problem worse because mixing is not homogeneous (clam beds are very heterogeneous).

The FMAT discussed the options on the table and how to incorporate input from suggested options. For any of the solutions, there are specific details that need to be addressed - many of these options require changes to multiple aspects of the regulatory program. Also, there is a need to figure out how to address and classify discards. Presently, because mixing is occurring in the cages already and it is not being enforced or monitored/data collected on it, we already have a mixed clam catch issue in the cages and it can create issues for the stock assessment.

It was apparent to all the FMAT members that there wasn't one solution that could be identified with industry wide support - given the big differences in processor and vessel operations - and that any solution would require additional development and changes to operations either onboard vessels, in processors, or require new or enhanced monitoring which would incur additional costs. Therefore, the FMAT concluded that an approach focused on research and development, through an EFP would be beneficial to allow some of the "kinks" to be worked out to find an effective approach GARFO could consider implementing. The FMAT also did indicate that longer term solutions, like electronic monitoring (EM), that could also enhance future data collection while addressing this issue seemed appealing. However, implementing solutions like that would require development and industry support. EM development would require human review to develop artificial intelligence types of approaches - however development would be relatively quick for a binary issue like surfclam or quahog (i.e., just identifying species A or B; easier to train software). The FMAT recommends incentivizing cooperation by allowing vessels that apply for the EFP to do research and development while fishing mixed trips (e.g., in sorted cages, or within cages) if they are developing a monitoring system to effectively assess the catch composition at the same time (assessing the mixing level). GARFO can work through its EFP program with the industry directly (i.e., similar to option 1, Table 1 in the white paper). The FMAT noted that allowing mixed catches without catch monitoring is not advisable. An EFP could be done faster than an Amendment but would apply to the specific vessel(s) only. There are ways to link the dealer to the vessel, through the EFP, to link up the potential processor role in monitoring protocols. This would allow the feasibility of an approach to be evaluated without full implementation to the entire fleet.



Atlantic Surfclam and Ocean Quahog Committee Meeting Summary October 2021

The Mid-Atlantic Fishery Management Council's (Council) Atlantic Surfclam and Ocean Quahog (SCOQ) Committee met via webinar on October 15, 2021 to review the Fishery Management Action Team (FMAT) draft document entitled, "Approaches to Address the Current Species Separation Requirements in the Atlantic Surfclam and Ocean Quahog Fisheries."

Committee members present: Peter Hughes (chair), Maureen Davidson (vice-chair), LCDR Matt Kahley, David Stormer, Kate Wilke, Jay Hermsen (GARFO)

Others present: Jessica Coakley and José Montañez (Council staff), Doug Potts, Sharon Benjamin (GARFO), Brett Alger (NOAA Fisheries, Office of Science and Technology), Peter Himchak, Dave Wallace.

Peter Hughes (chair) made introductory remarks. He noted that this seems like an easy issue, but it is in fact a very issue complex to address. The advisors meet a few days ago and had a constructive meeting. The summary of that meeting was provided to the Committee along with the draft document on the species separation regulation issue being prepared by the Fishery Management Action Team (FMAT). It was noted that the FMAT intended to improve the current version of the white paper incorporating by incorporating the advisors and Committee ideas/comments.

Staff provided a quick summary of how we got here. This was an issue raised by Industry. In 2020 an FMAT was formed. They started working on this issue recently due to other staff workloads, which slowed progress. The draft white paper was developed from an FMAT meeting (in 2020) and via correspondence. The draft document was taken to the advisory panel (AP) and to the Committee for early input. The Council will be looking at this draft white paper in December.

With the input from advisors and Committee, the FMAT will have another meeting in a couple of weeks to enhance the document. Then it makes sense to have another Committee meeting before the Council meeting in December to explore directions for the Council to take in December. The Council will decide if this can be addressed as just a NMFS regulatory action, whether to let the industry work this out with GARFO, or to work through an amendment process. Perhaps having the Committee meet the week of November 29 or on the front end of the Council meeting makes sense. December is a busy month due to Council activities.

Staff briefed the committee on the input received from the advisors. The advisors provided input on the different ways the industry operates. The solutions to problem vary according to industry needs. Some advisors indicated that sorting and separating surfclams and quahogs onboard the boats is not feasible; other have noted it is and they are already sorting. Others have indicated that allowing mix cages on a trip may be a solution.

In the 1990s, law enforcement sorted through cages - they would dump 1 cage per vessel and subsample a few of the bushels (i.e., subsample a few of the 32 bushels per cage). But this was a difficult process. Some advisors noted that enforcement and monitoring at the plant may be fine. But others indicated that it would not be possible to monitor at the plant. Some plants only process surfclam or quahog, while other plants process both species. Mixed cages are not desirable in many of these plants and are treated as trash.

A Committee member asked about the scale and scope of the mixing issue. Staff explained that we do have some information on the extent of the mixing from the clam surveys. Surfclam are found in deeper areas now where ocean quahog are also found. SCEMFIS is also working on a project to look at the extent of mixing in some of these beds.

Another Committee member asked about the exempted fishing permit (EFP). Is reviewing an application an administrative burden? How many boats do we think would be willing to apply for an EFP to do research on this? Staff noted that another idea put forward by the FMAT was to potentially suspend the requirements temporarily in order to assess level of mixing, using an intensive short term sampling program. Another approach could be to use an EFP on mixed trips with onboard research/sorting to assess the extent of the issue, so we could better assess how the regulations could be changed.

A committee member asked what processors do when they get mixed cages? How would they handle this? In most cases, right now, ocean quahog are treated as trash in surfclam-only facilities. One of the challenges is what to do with the non-target clams cage if the processor does not want it?

There also may be a tagging issue for mixed trips. Even if split off and trashed, if they are tagged, they are counted as landings. They really aren't landings if there is no intention to use them and they are trashed. So, for monitoring this seems important.

The Committee asked: Are annual surveys able to identify where the animals are? Where are they moving to? From the stock assessment we have seen a shift of the range, moving to deeper waters. But we are not able to ascertain the extent of change for individual clam beds. The survey is not using same stations [fixed stations] over time. They use a random sampling design in the same strata.

Jessica reviewed all potential solutions currently included in the document and highlighted some of the ideas proposed by the advisors.

The staff anticipates adding the suggestions from industry for mixed trips with cages for both species allowed on board in the document. The specific approaches to implement something like this could potentially be done through an EFP. The industry provided additional input on how the quahog beds that are now depleted and have surfclam setting there now.

The input from the AP will be used to further address advantages/disadvantages described in the document. A committee member noted that the strategy to let GARFO and industry figure it out; (i.e., No Council involvement) is not feasible since industry requested the Council address this issue, because industry will be out of compliance if nothing is done. It was suggested that allowing for some mixing until we find a consensus to this problem may be beneficial.

There were questions about whether this is one or two species of clam. Staff discussed genetic work pending on surfclam, and that quahog are understood to be one stock. A Committee member noted that there are North/South differences in this issue. They wondered if there was a way for the percentage of mixed clams to be spread across all vessels or all spatial temporal area. Since ACL is not fully utilized, this is not an ACL issue. Stock is not overfished and overfishing is not occurring. It is more of a data quality issue; the mixing creates data issue b/c we don't not what the mixing is. It is an accounting issue.

Another Committee member noted that the reason the accounting issue is a problem is because it creates uncertainty in the stock assessment and tracking system.

A Committee member asked if mixing is significant or ranges from significant to insignificant? Is there a level of mixing that is significant to the population? The significance of the mixing to the stock assessment is uncertain at this point. It is work that needs to be done. However, some ocean quahog beds are being depleted and surfclam are setting, there but we do not know what those amounts are. Fisheries landings/CPUE help scale the stock assessment, so having accurate accounting for each species is important.

A member of the public commented that this is not a biological problem. We fish for dollars and not for clams, however because of changing water temperature and some clam bed depletions, we now have to go offshore and are fishing in areas where ocean quahog are also present. This individual noted that a % of ocean quahog that are landed with surfclam as a percentage of the total quota or biomass is insignificant. It is probably less than 1% on both species from their perspective.

Adjourned 11:07 am.

After the meeting, an additional approach was emailed to staff:

From: Peter Hughes <PHughes@atlanticcapex.com>

Sent: Friday, October 15, 2021 11:37 AM

To: Coakley, Jessica <jcoakley@mafmc.org>; Montanez, Jose <jmontanez@mafmc.org>

Subject: FW: SC/OQ

SC/OQ

Some of my very raw thoughts:

Some sort of tolerance (2-5%) should be built into the action.

A window of 2-3 years should be on the table to refine and finalize any action.

An overall industry EFP of some sort should be developed with input from the FMAT, AP, Committee and other stakeholders...

At the end of the year, the percentage of mixed clams should be spread spacially [spatially] over all areas so as not to putatively hurt vessels who are faced with having to fish mixed clam beds. This could also provide industry the opportunity to exert peer pressure or accountability on vessels who are out of compliance but could also trigger a tiered penalty system from enforcement on individual vessels who are out of compliance such as:

- 1) First non-compliance violation the vessel would receive a written warning?
- 2) Second non-compliance on same vessel would receive a monetary fine?
- 3) Third non-compliant trip off of the same vessel would lose their trip?

Seeing very little mixing of clam species North of LI, but South of LI we see mixing of species. Its impractical for vessels fishing in the South and processors in the South to move their businesses and processing businesses into the Northern regions.

These are single species with no subspecies yet identified that have a range from Virginia up to Maine and so should be regulated as a single spacial [spatial] and temporal stock. I would recommend the percentage of mixing should be calculated broadly throughout the species range while also understanding where infractions take place.



Atlantic Surfclam and Ocean Quahog Advisory Panel Meeting Summary October 2021

The Mid-Atlantic Fishery Management Council's (Council) Atlantic Surfclam and Ocean Quahog (SCOQ) Advisory Panel (AP) met via webinar on October 13, 2021 to review the Fishery Management Action Team (FMAT) draft document entitled, "Approaches to Address the Current Species Separation Requirements in the Atlantic Surfclam and Ocean Quahog Fisheries." A series of trigger questions were posed to the AP to generate discussion as the group discussed components of the document. Please note: Advisor comments described below are not necessarily consensus or majority statements; in those cases, the differences in opinions are noted.

Advisory Panel members present: Tom Dameron, Peter deFur, Peter Himchak, Samuel Martin, David O'Neill, Jeffrey Pike, Guy Simmons, Dave Wallace. Monte Rome was unable to enter webinar due to technical difficulties on Council end [provided verbal comments to staff and via email].

Others present: Peter Hughes (SCOQ Ctte. Chair), Jessica Coakley and José Montañez (Council staff), Doug Potts, Sharon Benjamin (GARFO), Brett Alger (NOAA Fisheries, Office of Science and Technology), Ron Larsen

Trigger questions:

Are there other "**Key Issues**" we missed or overlooked?

Did the FMAT capture relevant aspects of industry operations?

Other ideas or potential solutions to address mixing/monitoring/enforcement components of this issue? Advantages/disadvantages?

What else is important for the Council to know?

Advisor Input:

Advisors felt the sections on "*Cage Tagging Requirements, VMS, Logbook, and Dealer Reporting Requirements*" described the process accurately.

There was a discussion about whether having a mix of species in the cages is currently enforced or if there is a tiny amount of mixing allowed. It was noted by staff that the current regulations do not allow mixing. Trips are declared as either SC or OQ trip and there is no small take allowed either. It is not presently enforced as enforcement does not dump the cages. An advisor noted that this was not really an issue before for enforcement, because the catches were less mixed - but now surfclams are setting into areas where ocean quahog beds were previously fished out, and so it makes it difficult to access the surfclam without resulting in mixed catches. The industry will not be able to comply with these zero tolerances for mixing issue going forward.

Staff noted that need to look at a long-term solution to this problem - will become more challenging as climate change continues and dense beds of surfclam are depleted.

The advisors discussed "*Onboard Sorting*." It was noted that there is technology currently available that the industry could put on vessels - such as EM sorting/AI technology that could better separate surfclam and ocean quahog. They noted that the costs of the technology are high and they expressed concerns about the technologies ability to address clams with broken shells.

A question was asked about processor discards - it was noted that there are no discards of the non-target clams being reports and some advisors indicated that the quahogs are pulled out of the surfclam cages and treated like any other trash (rocks, etc.) and disposed of.

There was discussion of the current "*Biological Sampling*," which included surfclam minimum size sampling and observer coverage.

There was discussion and clarification that bycatch/discards for the stock assessment is estimated from the onboard observation (observer coverage). The biological sampling is for the clam minimum size. The observer sampling is not known if it happens in areas where mixing occurs.

The advisors discussed how enforcement of the surfclam minimum size was handled back in the 1990's (when it was last implemented). Enforcement would subsample 2-3 bushels of clams if it looked like there were many clams that were smaller than the minimum size. Dump a cage to count and measure clams, and then would confiscate the entire load - if one cage was illegal the whole load was illegal. There were never multiple cages dumped - it was noted that it was hard enough to shovel one cage back in.

It was noted that on the belt, could have many clams moving down the belt rapidly, which made it difficult to sort the small clams out. Suspending size limit reduced this need for sorting and dumping the cages.

Rollers or shakers can handle the width of the clams - so both SC and OQ are about the same width and are not separated. Having to manually pick through would be difficult. Advisors want to find a way to do this without enforcement people as it will be very labor intensive.

There was discussion about the "Key Issues" noted in the document.

There was discussion about the processor's tolerance for mixing. Is it 1 or 2%? Is it treated as trash? It was stated that at present it is probably a single digit percentage because captains are actively avoiding these areas, but that at some processors it is being treated as trash and disposed.

Others noted that they are pulling surfclam from quahog cages and setting them aside in a cooler, and then processing them at next opportunity.

Some facilities use inspection belt, and some may shift from surfclam to quahog shucking. Advisors noted that if paying for a surfclam trip, they don't want a lot of quahogs in there.

SCEMFIS is developing a report will highlight the percent mixes in some of the areas if they were targeted (report due in October; snapshot of overlaps).

Surfclam trips are more valuable than quahog trips, but it is becoming less feasible to avoid quahogs. Staff asked if processor pays captains on yield of trip - each processor handles differently so that is proprietary. Some may do that. It was noted that it may not be higher revenue for better trip, but may be less desirable/high yield trip.

The group discussed aspects of processing - quahogs are generally steam shuck, but surfclam may be steam shucked or hand shucked. It was noted that the time of year and vessel may affect the surfclam mortality - particularly for those vessels that don't have refrigeration. Winter is less problematic because it is cooler.

Advisors noted that in NE/SNE do not have a mixing issue at this point; the species sets are further apart. The issue is more in the southern area (Hudson south to VA) - more effect to processors in NJ, MD, etc. Some of the smaller vessel fisheries in NE are having less of an issue- may not need monitoring - and perhaps some vessels could stay with zero tolerance.

The group then moved into discussion "*Possible Options*" to address the issue.

It was stated that this is a complex issue and that there should be a consideration of that North South separation. It was suggested that there should be consideration to moving the tagging of the resource into the processing plant to get accurate accounting on what is being caught, rather than on the vessel. This can only be done in an area where separation is possible. This species separation is not possible on the boat. It was stated that separation in the plant and reporting at the processing facility should be considered.

It was suggested noted that onboard sorting is implemented but is often less successful - so you could consider X% with monitoring of the amount retained at the processing sites through some sort of intensive processor sampling.

Another advisor noted that they felt monitoring/enforcement at the plant did not make sense. The plants don't have the equipment to do it there. Video, electronic sampling at the boat or plant is

not possible because the belt goes too fast, there is not 100% separation. At the plant, the material is about 8 inches thick.

Given the number of clams processed at a given time, it is not possible to visually inspect and pick up something off the belt.

Since we do not have a good handle on the degree of commingling of landed clams, it was also noted that a higher intensity of port sampling for a year or two could help better assess the intensity or degree of commingling in landed cages.

Separating quahog from surfclam on deck and dumping animals off the boat probably causes high mortality rates.

It was asked if mix trips are allowed (i.e., land both species on the same trip or cage)? They are not. Furthermore, you cannot land animals without appropriate cage tagging. One option may be to explore allowing mixed trips. So, perhaps allow mix trips with separated cages on board that tagged for each species could be a solution. That is allow for a trip to be declared as surfclam, quahog, or mixed trip. This could potentially be explored through the Exempted Fishing Permit (EFP) program to work out some of the details, logistics before applying to entire fleet.

A question was asked whether these kinds of changes would require a modification of the FMP - staff and GARFO noted that changes to those regulation likely would need to go through a Council process/Amendment.

An FMAT member asked what type of real-time information would you need to avoid areas where mixed catches are found? And what considerations (e.g., mixing ratios) would be important when assessing to move to along to another fishing location? Response, the captain can see if you have mix catch in a single haul (at a coarse level) and may or may not decide to move to another fishing location. However, there is no rule of thumb and captain experience plays a major role in fishing decisions. Technology may be useful to assess some mixing level (e.g., 10%) and this could be beneficial, but a zero tolerance level (as currently in the regs) is not a good thing.

Additional summarized input from advisor who missed the webinar:

Enforcement now is not the same as 25 years ago - the relationship is different, and the clams are plentiful. So, the approach should be different than back then as they are more trustworthy.

Important to account for these species of clams - right now surfclam tags are being overused and cages are being underfilled, because of the presence of quahogs.

Beds of quahogs [in the south] are depleted now, and there are surfclam sets on those beds.

As an approach, you could potentially use the survey data to assess the amount of ocean quahog in a specific surfclam area; say area A. Then, apply that factor to the catch (i.e., proportion), and to all landings coming from area A to derive the amount of mixing in cages and required tags from those areas.

Monitoring approach that requires observers are not desirable as the observer program is not adequately staffed and funded as is - it would require substantial resources to use a program like this to monitoring mixing on board.



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November 29, 2021

MAMFC Executive Director, Chris Moore
NEFMC Executive Director Tom Nies

Re: Great South Channel Habitat Management Area (GSCHMA)/ Surf Clam Harvest

Dear Sirs,

We hope this letter finds the council safe and well.

This letter is addressed to both the MAMFC and the NEFMC regarding Surf Clam harvest capabilities for our businesses on Nantucket Shoals. Surf Clams are managed by the MAFMC, and Habitat is managed by the NEFMC, hence this letter is addressed to both councils as we will need the support of both for our community to be sustained in the future.

In April of 2018, the Surf Clam/Ocean Quahog Advisory Panel identified in the FPR a critical issue that we are now seeing come true that is negatively impacting our ability to continue in business.

When the HMA was closed April 8th, 2018, to all mobile bottom tending gear, permitted Surf Clam vessels were allowed a one-year exemption to continue operating in the GSCHMA from April 9th, 2018, through April 8th, 2019. The exemption was granted for the industry to prove that it did not have adverse effects on complex habitat and thus should be permanently exempt from the closure. The industry basis is that clam harvest vessels can only work in areas of high energy sandy environment, due to the nature of the gear as well as the habitat in which surf clam lives, thus should be allowed a permanent exemption from the closure.

The critical issue identified in the FPR was this, **“If the clam dredge exemption is not continued after April 8, 2019, this action has the potential to have large negative impacts from a biological, social, and economic prospective. If the exemption is not granted it will negatively impact the Mid-Atlantic Council's ability to manage its jurisdictional responsibilities for the surf clam fishery.”**

To mitigate known potential negative impacts of the closure, as far back as October 2015, the NEFMC set out to identify areas that surf clam vessels could work within the HMA through a Habitat Clam Dredge Exemption Framework Adjustment as a trailing action to OHA2. In the final measures of the action, 3 areas were identified, 2 of which are open year-round, one is seasonal from May 1 through Oct 31 each year.

The 3 areas chosen are not viable areas to sustain our business. McBlair area has never had a significant biomass of clams, Fishing Rip Area is open year-round, but gear gets destroyed due to hard bottom, so we cannot financially afford to work there. Old South is viable but only open part of the year. Rose and Crown area (not chosen) is closed to fishing except for an EFP (#19066) that is allowing harvest in that portion of the HMA under certain monitoring conditions. This is the historic area that allowed the fishery to be robust in the past decades. Current data gathered thus far suggests that vessels can work the Rose and Crown or any other area on Nantucket Shoals without adversely effecting complex habitat.

The ability to harvest surf clams from Nantucket Shoals is critical to our business existence. The hand shuck fresh clam business relies on a larger clam size to be profitable. The ability to harvest larger clams has a direct relation to the labor that we can find to accomplish the work. No other areas have been seen to be as sustainably resilient as Nantucket Shoals for large surf clams. We have been 2 years working different areas outside the closure to provide clams to our plant in New England. We have not been able to maintain consistent catch to stay financially viable and are at risk of losing our ability to do business.

Another reason noted in the Federal Register for closing the Shoals was to avoid disturbing cod spawning aggregation that *may* occur there. There is no current evidence that cod spawning occurs there or if cod are found in the area at all.

The closure took place as a part of the OHA2 amendment process. Facts were presented to prove that clam harvest does not have an adverse effect on complex habitat. The exemption was provided for a year for scientific data to be presented to prove those

facts. The data was presented and not given its due attention. Solutions were presented to discover discreet areas that could easily be monitored, but not listened to. We need the data to be re-examined immediately.

The simple fact is that the clam industry lost out on one of the most valuable areas for the harvest of surf clams to other fishing sectors that do not even work in the area. Those sectors (Scallops and Groundfish) needed other areas to stay open and since they do not work on Nantucket Shoals, the clam industry became an easy target to trade the surf clam bottom for their needs. That of which indicated to the Councils that those fisheries were giving up productive (habitat) bottom for other (habitat) bottom. In effect the trade for that bottom was a net win for those fisheries and a net (if not total) loss for the clam industry which does not find or catch clams in the same bottom as draggers and scallopers.

We need to re-open the case in asking both councils to take part in sustaining a clam community that has been established for almost a half a century but is at the brink of extinction. We are asking that the scientific data be reviewed and examined to find areas of flexibility.

Will we adjust the areas within the HMA so we can have workable areas to harvest? Will we look at the scientific data and identify several more discreet areas within the HMA that do not have complex habitat? Will we look at rotational management of discreet areas within the HMA? Or will we get creative and not just draw a big box that puts 150 jobs out of employment and withdraws millions of dollars out of commerce?

We have climate change occurring and can no longer think that there will always be other places fish. Global climate change is causing a significant surge in offshore wind energy initiatives to build large scale wind farms over historical clam grounds in the Mid-Atlantic and New York Bight.

We have had major changes in our businesses over the past 2 years with the pandemic. We are trying to survive and keep jobs viable and communities strong. We are trying to support local businesses that are part of the essential food chain in New England, who also support and sustain jobs and communities.

This is a serious issue that we implore the councils to take up immediately and move with expediency. The data is available with scientific studies occurring and ongoing to increase the availability of clam harvest within the HMA.

There is a solution, but first we need the councils to be the champions in finding the solution. The MAMFC has the charge of management of the Surf Clam harvest in any area. We ask the MAFMC to stand up on behalf of the community they represent and help create a sustainable pathway within OHA2 for this community to survive. We ask the NEFMC who has the charge of management of Habitat to look for ways that co-existence can take place when science-based advice proves it can be possible without negative impacts.

We need this to be given serious and immediate attention. The question is, will you allow a community to fall by the wayside in a sustainable fishery due to lack of focus and granular attention to the facts?

There are many details that could not be presented within that can be provided if given the platform to do so. The question is, will you provide a platform to do so?

We hope so.

Sincerely,

Sam Martin

Sam Martin, COO
Atlantic Capes Fisheries Inc
Galilean Seafood Inc
Atlantic Harvesters LLC

Monte Rome

Monte Rome, President
Intershell Seafood Corp

Cc: Jessica Coakley, Surf Clam Coordinator MAFMC
Cc: Michelle Bachman, Habitat Coordinator NEFMC