December 2022 Council Meeting

Monday, December 12, 2022 – Thursday, December 15, 2022

Hybrid Meeting:
The Westin Annapolis
(100 Westgate Circle, Annapolis, MD, 21401, 410-972-4300)
or via Webex webinar

This meeting will be conducted as a hybrid meeting. Council members, other meeting participants, and members of the public will have the option to participate in person at The Westin Annapolis or virtually via Webex webinar. Webinar connection instructions and briefing materials will be available at: https://www.mafmc.org/briefing/december-2022.

Monday, December 12th

1:30 p.m. – 2:00 p.m.	**Executive Committee *(Closed Session)* (Tab 1)** – Ricks E Savage Award
2:00 p.m.	***Council Convenes***
2:00 p.m. – 3:00 p.m.	**Habitat Activities Update (Tab 2)** – Presentation from Greater Atlantic Regional Fisheries Office Habitat and Ecosystem Services Division on activities of interest (aquaculture, wind, and other projects) in the region
3:00 p.m. – 4:00 p.m.	**Offshore Wind Updates (Tab 3)** – Updates from the Bureau of Ocean Energy Management (Karen Baker, BOEM Chief - Office of Renewable Energy Programs) – Updates on state working group on a fisheries compensation fund
4:00 p.m. – 5:30 p.m.	**Atlantic Surfclam and Ocean Quahog Species Separation Requirements Amendment Final Action (Tab 4)** – Review public hearing comments – Review Committee and Staff recommendations – Consider final action

Tuesday, December 13th

9:00 a.m.	***Council Convenes with the Atlantic States Marine Fisheries Commission's (ASMFC) Summer Flounder, Scup, and Black Sea Bass Management Board***

9:00 a.m. – 9:30 a.m. **Harvest Control Rule Framework / Addendum Percent Change Approach and Recreational Fishery Models (Tab 5)**

- Review the Percent Change Approach approved by the Council and Policy Board for setting recreational measures for summer flounder, scup, and black sea bass
- Review Accountability Measures under the Percent Change Approach
- Overview of recreational fishery statistical models to inform setting of 2023 measures

9:30 a.m. – 11:00 a.m. **2023 Scup Recreational Measures (Tab 6)**

- Review Advisory Panel and Monitoring Committee recommendations
- Adopt target level of coastwide harvest based on the Harvest Control Rule Framework/Addendum Percent Change Approach
- Recommend 2023 recreational management measures for federal waters, as well as any considerations for adjustments to state/regional measures

11:00 a.m. – 12:30 p.m. **2023 Black Sea Bass Recreational Measures (Tab 7)**

- Review Advisory Panel and Monitoring Committee recommendations
- Adopt target level of coastwide harvest based on the Harvest Control Rule Framework/Addendum Percent Change Approach
- Recommend conservation equivalency or coastwide management and associated measures for 2023
- Review and consider approval of Virginia's proposal for February 2023 recreational fishery (Board only)

-------- Lunch 12:30 p.m. – 1:30 p.m. --------

1:30 p.m. – 3:00 p.m. **2023 Summer Flounder Recreational Measures (Tab 8)**

- Review Advisory Panel and Monitoring Committee recommendations
- Adopt target level of coastwide harvest based on the Harvest Control Rule Framework/Addendum Percent Change Approach
- Recommend conservation equivalency or coastwide management and associated measures for 2023

3:00 p.m. ***Council and Summer Flounder, Scup, and Black Sea Bass Board Adjourn***

3:00 p.m. ***Council Convenes with the ASMFC Interstate Fishery Management Program Policy Board***

3:00 p.m. – 4:30 p.m. **Previously Initiated Recreational Reform Actions (Tab 9)**

- Review issues to be addressed under Recreational Reform Initiative Technical Guidance Document and Recreational Sector Separation and Catch Accounting Amendment
- Discuss and provide guidance on next steps

4:30 p.m. ***Council and Policy Board Adjourn***

Wednesday, December 14th

9:00 a.m. – 12:00 p.m. **Climate Change Scenario Planning: Review Final Scenarios and Discuss Applications (Tab 10)**

(Jonathan Star, Scenario Insight)

- Review final scenarios
- Review and discuss initial challenges, opportunities, and potential actions identified at Manager Brainstorming Sessions
- Discuss recurring ideas and main takeaways, and identify key discussion topics for February summit meeting

-------- Lunch 12:00 p.m. – 1:00 p.m. --------

1:00 p.m. – 2:30 p.m. **Monkfish Framework 13: 2023-2025 Specifications and Management Measures (Tab 11)**

- Review Framework 13, including recommendations from the Advisory Panel, New England SSC, Joint Committee, and PDT
- Review motions from the New England Fishery Management Council
- Approve Framework 13

2:30 p.m. – 3:30 p.m. **Protected Resources Updates (Tab 12)**

- Review Protected Resources Committee Meeting Report and November/December ALWTRT meeting outcomes
- Discuss final Sturgeon Bycatch Action Plan recommendations and potential joint action with NEFMC

3:30 p.m. – 5:00 p.m. **2023 Implementation Plan (Tab 13)**

- Review and approve 2023 Implementation Plan

Thursday, December 15th

9:00 a.m. – 10:00 a.m. **Proposed Hudson Canyon National Marine Sanctuary (Tab 14)**

- Presentation from LeAnn Hogan (Regional Operations Coordinator for NOAA Sanctuaries Eastern Region) on the proposed sanctuary and the NMSA section 304(a)(5) consultation process with Councils
- Develop Council recommendations to NOAA Sanctuaries on whether it is necessary to develop fishing regulations in the EEZ to implement the proposed sanctuary

10:00 a.m. – 1:00 p.m. **Business Session**

Committee Reports (Tab 15) – SSC, Ecosystem and Ocean Planning Committee, Mackerel, Squid, Butterfish Committee (*Illex* Permit Action disapproval follow-up)

Executive Director's Report (Tab 16) (Dr. Chris Moore)

Organization Reports – NMFS Greater Atlantic Regional Office, NMFS Northeast Fisheries Science Center, NOAA Office of General Counsel, NOAA Office of Law Enforcement, US Coast Guard

Liaison Reports (Tab 17) – New England Council, South Atlantic Council

Other Business and General Public Comment

This meeting will be recorded. Consistent with 16 USC 1852, a copy of the recording is available upon request.

The above agenda items may not be taken in the order in which they appear and are subject to change, as necessary. Other items may be added, but the Council cannot take action on such items even if the item requires emergency action without additional public notice. Non-emergency matters not contained in this agenda may come before the Council and / or its Committees for discussion, but these matters may not be the subject of formal Council or Committee action during this meeting. Council and Committee actions will be restricted to the issues specifically listed in this agenda. Any issues requiring emergency action under section 305(c) of the Magnuson-Stevens Act that arise after publication of the Federal Register Notice for this meeting may be acted upon provided that the public has been notified of the Council's intent to take final action to address the emergency. The meeting may be closed to discuss employment or other internal administrative matters.

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

Stock Status of MAFMC-Managed Species

(as of 12/2/22)

SPECIES	STATUS DETERMINATION CRITERIA		Stock Status	Most Recent Assessment
	Overfishing $F_{threshold}$	Overfished ½ B_{MSY}		
Summer Flounder 	$F35\%_{MSP}$=0.422	60.87 million lbs	No overfishing Not overfished	Most recent management track assessment was 2021.
Scup 	$F40\%_{MSP}$=0.200	99.23 million lbs	No overfishing Not overfished	Most recent management track assessment was 2021.
Black Sea Bass 	$F40\%_{MSP}$=0.46	15.92 million lbs	No overfishing Not overfished	Most recent management track assessment was 2021.
Bluefish 	$F_{35\%SPR}$=0.181	222.37 million lbs	No overfishing Overfished	Most recent management track assessment was 2021.
***Illex* Squid (short finned)** 	Unknown	Unknown	Unknown Unknown	2022 research track assessment failed, but peer review agreed likely "lightly fished in 2019," though with cautious caveats
Longfin Squid 	Unknown	46.7 million lbs	Unknown Not overfished	Most recent assessment update was 2020; not able to determine current exploitation rates.
Atlantic Mackerel 	$F_{40\%}$=0.22	199.6 million pounds	Overfishing Overfished	Most recent management track assessment was 2021.
Butterfish 	F_{Proxy}=2/3M =0.81	43.5 million lbs	No overfishing Not overfished	Most recent management track assessment was 2022.
Chub Mackerel 	At least 3,026 MT of catch per year	At least 3,026 MT of catch three years in a row	No overfishing Not overfished	No stock assessment.

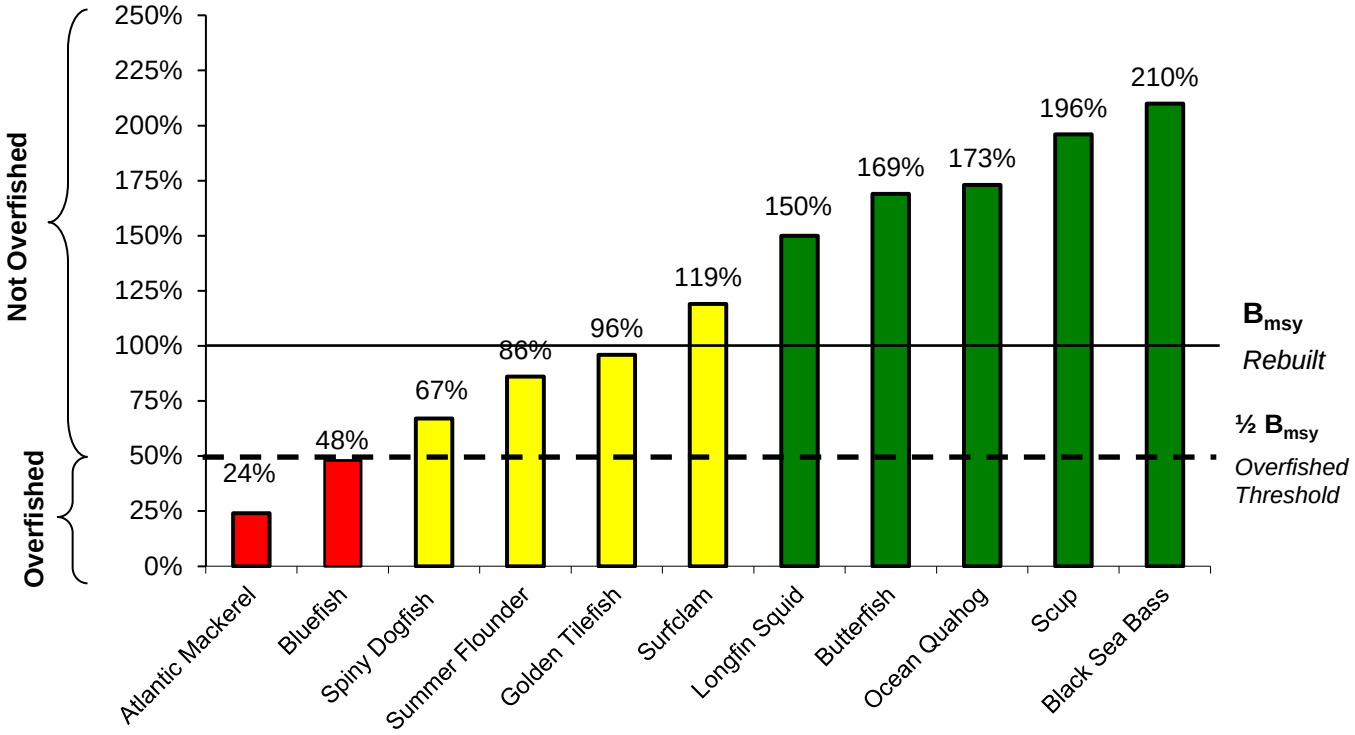
SPECIES	STATUS DETERMINATION CRITERIA		Stock Status	Most Recent Assessment
	Overfishing $F_{threshold}$	**Overfished** ½ B_{MSY}		
Surfclam 	$F/F_{threshold} = 1$ [a]	$SSB/SSB_{threshold} = 1$ [b]	No overfishing Not overfished	Most recent management track assessment was 2020
Ocean Quahog 	$F/F_{threshold} = 1$ [c]	$SSB/SSB_{threshold} = 1$ [d]	No overfishing Not overfished	Most recent management track assessment was 2020.
Golden Tilefish 	$F_{40\%MSP}$=0.261	12.12 million lbs	No overfishing Not overfished	Most recent management track assessment was 2021.
Blueline Tilefish 	Unknown	Unknown	South of Cape Hatteras: No overfishing Not overfished North of Cape Hatteras: Unknown Unknown	Most recent benchmark assessment was 2017.
Spiny Dogfish (Joint mgmt with NEFMC) 	F_{MSY}=0.2439	175.6 million lbs Female SSB	No overfishing Not overfished	Most recent assessment was 2018. Dec 2022 research track review
Monkfish (Joint mgmt with NEFMC) 	NFMA & SFMA F_{MAX}=0.2	NFMA - 1.25 kg/tow SFMA - 0.93 kg/tow (autumn trawl survey)	Unknown Unknown	Management track assessment is being peer reviewed in September 2022.

SOURCES: Office of Sustainable Fisheries - Status Report of U.S. Fisheries; SAW/SARC, SEDAR, and TRAC Assessment Reports.

[a] $F_{threshold}$ is calculated as 4.136 times the mean F during 1982 – 2015.
[b] $SSB_{threshold}$ is calculated as $SSB_0/4$.
[c] $F_{threshold}$ is 0.019.
[d] $SSB_{threshold}$ is calculated as $0.4*SSB_0$.

Stock Size Relative to Biological Reference Points

(as of 12/2/22)



Notes:

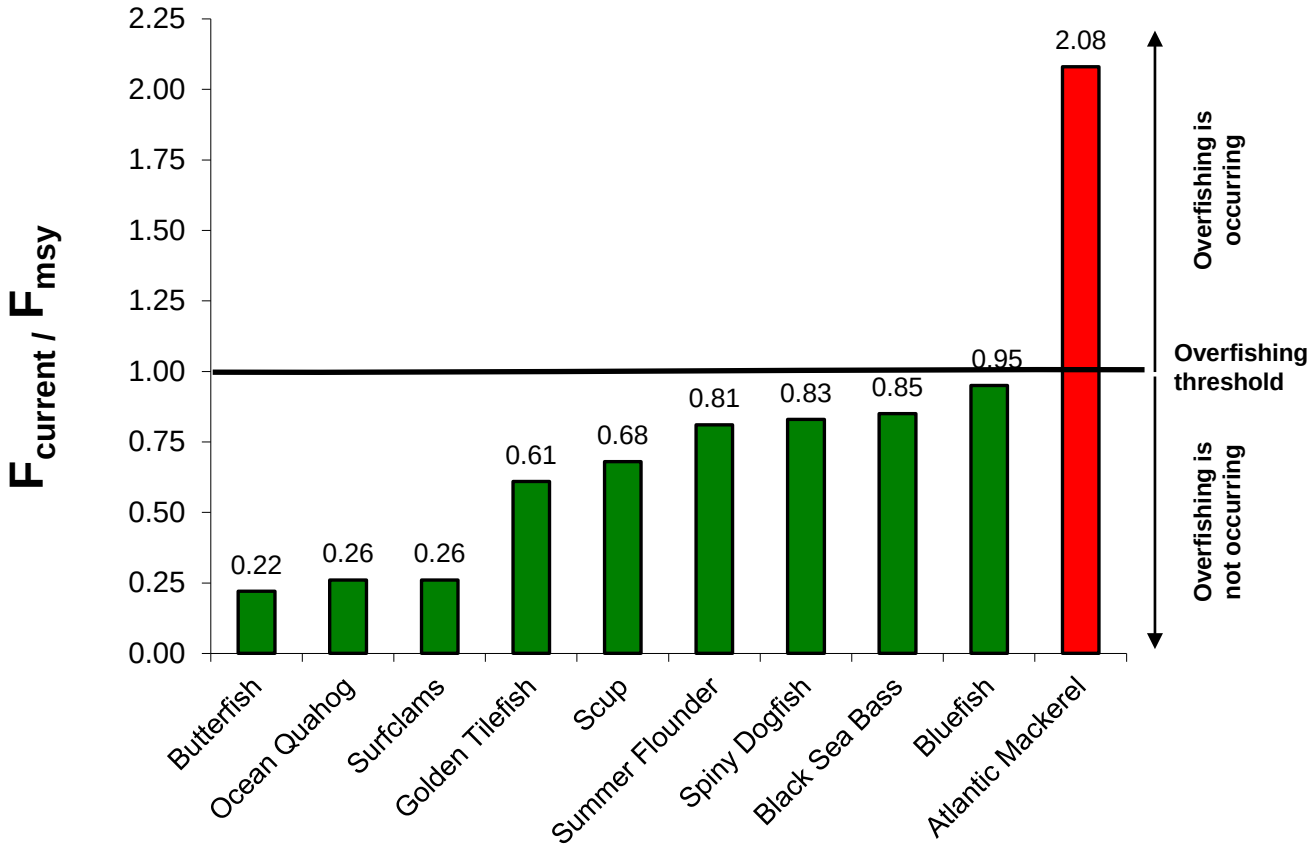
- Unknown B_{msy} - *Illex* squid, monkfish (NFMA & SFMA), blueline tilefish (North of Cape Hatteras), and chub mackerel.
- Of the 15 species managed by the Council, 5 are above B_{msy}, 6 are below B_{msy}, and 4 are unknown.

Year of data used to determine stock size	
Atlantic Mackerel	2019
Black Sea Bass	2019
Bluefish	2019
Butterfish	2021
Golden Tilefish	2020
Longfin Squid	2018-2019 (average)
Ocean Quahog	2019
Spiny Dogfish	2018
Surfclam	2019
Scup	2019
Summer Flounder	2019

MID-ATLANTIC
FISHERY MANAGEMENT COUNCIL

Fishing Mortality Ratios for MAFMC-Managed Species

(as of 12/2/22)



Year of data used to determine fishing mortality	
Atlantic Mackerel	2019
Black Sea Bass	2019
Bluefish	2019
Butterfish	2021
Golden Tilefish	2020
Ocean Quahog	2019
Spiny Dogfish	2017
Surfclam	2019
Scup	2019
Summer Flounder	2019

Notes:

- Unknown fishing mortality: *Illex* squid, Longfin squid, monkfish (NFMA and SFMA), blueline tilefish (North of Cape Hatteras), and chub mackerel.
- Of the 15 species managed by the Council, 9 are above F_{msy}, 1 is above, and 5 are unknown.

Status of Council Actions Under Development

AS OF 12/2/22

FMP	Action	Description	Status	Staff Lead
Summer Flounder, Scup, Black Sea Bass *and* Bluefish	Recreational Reform Initiative Technical Guidance Document	The Council and Policy Board agreed to develop a technical guidance document to address the following topics: (1) identifying and smoothing MRIP outlier estimates, (2) use of preliminary current year MRIP data, and (3) maintaining status quo recreational measures. Some of these topics have been partially developed through the Harvest Control Rule Framework/Addenda; however, those aspects of the Framework/Addenda will sunset by the end of 2025. No additional progress has been made on a technical guidance document due to prioritization of the Harvest Control Rule. https://www.mafmc.org/actions/recreational-reform-initiative	The Council and Commission will discuss next steps for this document in December 2022.	Beaty
	Recreational Sector Separation and Catch Accounting Amendment	This joint MAFMC/ASMFC amendment considers (1) options for managing for-hire recreational fisheries separately from other recreational fishing modes and (2) options related to recreational catch accounting, such as private angler reporting and enhanced vessel trip report requirements for for-hire vessels. https://www.mafmc.org/actions/recreational-reform-initiative	The Council and Commission will discuss next steps for this amendment in December 2022.	Dancy
Surfclam and Ocean Quahog	Surfclam and Ocean Quahog Species Separation Requirements Amendment	As surfclams have shifted toward deeper water in recent years, catches including both surfclams and ocean quahogs have become more common. Current regulations do not allow surfclams and ocean quahogs to be landed on the same trip or in the same tagged cage. The Council is developing and Amendment to modify species separation requirements in these fisheries in the short-term. In addition, staff/NEFSC will explore longer term solutions for monitoring (such as electronic monitoring testing on the clam survey). https://www.mafmc.org/actions/scoq-species-separation	Public hearings were held in November 2022. The Council will review comments and consider final action in December 2022.	Coakley/ Montañez

FMP	Action	Description	Status	Staff Lead
Omnibus	Omnibus Essential Fish Habitat Amendment	This action is an opportunity to utilize the best available fish habitat science to improve EFH designations and support the Council's fish habitat conservation efforts while supporting the EFH consultation process. The consultation process plays an important role in addressing the impacts of non-fishing projects (such as wind energy projects) on fish habitat. This action will concurrently conduct the 5-year EFH review required under the Magnuson Stevens Act while amending fishery management plans for the Council, as needed.	This action was initiated in October 2022.	Coakley
Monkfish	Framework for 2023-2025 Specifications and other Management Measures	Includes potential changes to mesh size, days at sea usage, and trip limits. Joint FMP with New England. Was focused on increasing flexibility, but pending NE SSC ABC decision, may have to deal with reducing catch from recent years' catches.	NE Council Lead, Development ongoing, anticipated final action in December.	Feeney (NE), and Didden

Timeline and Status of Recent MAFMC Actions and Amendments/Frameworks Under Review

As of 12/2/22

The table below summarizes the status of actions after they have been approved by the Council. For information about the status of Council actions under development, please see the document titled "Status of Council Actions Under Development."

Title	Action Number	Council Approval	Initial Submission	Final Submission	NOA Published	Proposed Rule	Approval/ Disapproval Letter	Final Rule	Regs Effective	Notes
Excessive Shares Amendment	SCOQ Amd 20	12/9/19	4/24/20	9/25/20		8/24/22	11/7/22	11/23/22	12/23/22	
Black Sea Bass Commercial State Allocation Amendment	SFSBSB Amd 23	8/4/21	11/19/21	9/14/22						
Tilefish Multi-Year Specifications Framework	Tilefish FW 7	8/11/21	7/10/21	4/22/22		9/14/22	11/9/22	11/9/22	11/9/22	
Summer Flounder, Scup, Black Sea Bass Commercial/ Recreational Allocation Amendment	SFSBSB Amd 22	12/14/21	5/1/22	6/24/22	8/12/22	8/11/22	11/7/22	11/17/22	1/1/23	
MSB Rebuilding 2.0 Amendment	Amd 23	6/8/22	8/19/22	10/27/22	10/25/22	11/2/22				edits sent 11/18 - Needs to be in place January 2023
Recreational Harvest Control Rule Framework	SFSBSB FW 17; BF FW 6	6/7/22	8/31/22	11/21/22						

Timeline and Status of Current and Upcoming Specifications for MAFMC Fisheries

As of 12/2/22

Current Specifications	Year(s)	Council Approval	Initial Submission	Final Submission	Proposed Rule	Final Rule	Regs Effective	Notes
Golden Tilefish	2022-2024	8/11/21	10/7/21	4/22/22	9/14/22	11/10/22	11/9/22	Submitted under the Tilefish Multi-Year Specifications Framework 7
Blueline Tilefish	2022-2024	4/7/21	10/20/21	5/5/22	8/2/22	11/3/22	12/5/22	
Surfclam and Ocean Quahog	2021-2026	8/12/20	9/2/20	2/24/21	2/17/21	5/13/21	6/14/21	
Longfin Squid	2021-2023	8/10/20	10/14/20	7/2/21	5/26/21	7/22/21	7/22/21	
Butterfish	2023-2024	6/8/22	9/8/22					
Illex Squid	2023	8/10/22	11/10/22					SSC also reviewing in March 2023
Illex Squid	2022	4/6/22	5/18/22	6/30/22	N/A	8/9/22	8/9/22 to 12/31/22	
Atlantic Mackerel (including RH/S cap)	2023	6/8/22	8/19/22	10/27/22	11/2/22			Submitted under the Mackerel Rebuilding 2.0 Amendment
Chub mackerel	2023-2025	6/8/22	9/8/22					
Bluefish	2023	8/8/22	9/22/22	10/26/22	11/15/22			
Summer Flounder, Scup, Black Sea Bass	2023	8/9/22	9/28/22	10/26/22				
Spiny Dogfish	2023	10/5/22						NE Considers Dec 2022
Spiny Dogfish	2022 trip limit adjustment	10/6/21	12/30/21		2/25/22	4/7/22	5/1/22	

Recreational Management Measures

Current Management Measures	Year(s)	Council Approval	Initial Submission	Final Submission	Proposed Rule	Final Rule	Regs Effective	Notes
Summer flounder rec measures	2022	12/14/21	2/11/22	2/24/22	4/18/22	6/9/22	6/9/22	
Black sea bass rec measures	2022	12/14/21	2/11/22	2/24/22	4/18/22	6/9/22	6/9/22	
Scup rec measures	2022	12/14/21	2/11/22	2/24/22	4/18/22	6/9/22	6/9/22	
Bluefish rec measures	2022-2023	12/13/21	1/23/20	3/19/20	5/25/20	6/29/20	6/29/20	Reviewed in 2022. No changes from prevous year's measures.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 2, 2022

To: Executive Committee

From: Chris Moore, Executive Director

Subject: Ricks E Savage Award

The Executive Committee will meet in closed session on Monday, December 12 to consider nominations for the Ricks E Savage award. The award is presented annually to a person who has added value to the Mid-Atlantic Fishery Management Council process and management goals through significant scientific, legislative, enforcement, or management activities. The award is typically presented during the Council's February meeting.

Selection Process

1. Written nominations will be solicited and received by the end of November each year by the Executive Committee.
2. Initially, nominations may only be made by Mid-Atlantic Council members.
3. The Executive Committee will select the recipient by consensus.
4. The recipient's identity will remain confidential, if possible, until announced during the award presentation.

Other Award Rules

1. Candidates must be nominated each year (nominations will not carry over)
2. Recipients can be reimbursed for travel expenses to receive the award.
3. The recipient will receive a plaque. A permanent plaque will be placed in the Headquarters office in Dover with a list of all the recipients.

Past Recipients

2006 – Jim Ruhle
2007 – Jim Gilford
2008 – Phil Ruhle
2009 – Laurie Nolan
2010 – Dennis Spitsbergen
2011 – John Boreman
2012 – Jack Travelstead
2013 – Red Munden
2014 – George Darcy
2015 – Pres Pate
2016 – Lee Anderson
2017 – Howard King
2018 – Rich Seagraves
2019 – Rob O'Reilly
2020 – Warren Elliott
2021 – Steve Heins

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MEMORANDUM

Date: November 29, 2022

To: Council

From: Jessica Coakley, Staff

Subject: Habitat Activities Update

The Council will receive a presentation from the NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO) Habitat and Ecosystem Services Division (HESD) on activities of interest in the region.

Back in December 2015, when the Council initially adopted its habitat policies on fishing and non-fishing activities (https://www.mafmc.org/habitat), the Council also asked GARFO HESD to provide the Council with updates on projects of concern that are occurring throughout the region. Since there are numerous projects in the region each year, the Council identified its projects of concern to include: 1) All offshore projects (e.g., energy projects, cables, sand mining, etc.), and 2) Only large scale nearshore/estuarine projects (i.e., includes any large transportation and port development projects). In addition, the Council requested periodic written and/or verbal updates on projects of concern including other habitat activities of interest occurring at least biannually, if possible. So typically, each June and December, HESD is invited to present on these topics.

During this December presentation, Kevin Madley, Doug Christel, and Karen Greene of GARFO HESD staff will highlight activities including aquaculture, offshore wind activities and some of the port developments associated with offshore wind, as well as a brief update on some of the US Army Corps of Engineers Coastal Storm Risk Management Studies underway in the Greater Atlantic Region.

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MEMORANDUM

Date: December 2, 2022

To: Chris Moore, Executive Director

From: Julia Beaty, staff

Subject: Offshore Wind Energy Update

The following documents are included behind this tab:

- Staff memo dated 12/2/2022 summarizing presentations on offshore wind energy to be provided during the Council meeting on 12/12/2022
- Comment letter from Seafreeze Ltd. to the Bureau of Ocean Energy Management (BOEM) on the BOEM and NOAA Fisheries North Atlantic Right Whale and Offshore Wind Strategy
    - The following articles were also provided with the Seafreeze comment. These articles are linked below, but are not provided in the briefing book.
        - Daewel, U., Akhtar, N., Christiansen, N. *et al.* Offshore wind farms are projected to impact primary production and bottom water deoxygenation in the North Sea. *Communications Earth & Environment.* **3**, 292 (2022). https://doi.org/10.1038/s43247-022-00625-0
        - Study of North Sea Offshore Wind Farms Shows Change in Marine Ecosystems. Seafoodnews.com. November 30, 2022.

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MEMORANDUM

Date: December 2, 2022

To: Chris Moore, Executive Director

From: Julia Beaty, staff

Subject: Updates on Offshore Wind Energy Development

During the Council's December 2022 meeting, the Council will receive presentations on offshore wind energy development. Topics to be covered are summarized below.

Updates from the Bureau of Ocean Energy Management (BOEM)

Karen Baker, Chief of BOEM's Office of Renewable Energy Programs, will present an update to the Council. Topics to be covered may include but are not limited to the following:

- **Central Atlantic:** BOEM announced Draft Wind Energy Areas for the Central Atlantic on November 16, 2022, with a comment deadline of December 16, 2022. Two virtual public meetings will be held on November 30 at 12:30 p.m. and December 1 at 1:30 p.m. More information is available here.
    - Council staff plan to work with New England Council staff on a joint comment letter. The Council may discuss the content of this letter during their December meeting. The Council provided comments on earlier stages of this process in December 2021 and June 2022.
- **Empire Wind:** BOEM released a Draft Environmental Impact Statement (DEIS) for the Empire Wind project off New York on November 14, 2022. Virtual public meetings will be held on December 7 at 5:00 p.m., December 13 at 5:00 p.m., and December 15 at 1:00 p.m. The public comment period for the DEIS ends January 17, 2023. More information is available here.
    - Council staff plan to work with New England Council staff on a joint comment letter. The Council may discuss the content of this letter during their December meeting. The Council provided comments on earlier stages of the Empire Wind project in July 2021.
- **Coastal Virginia Offshore Wind (CVOW):** BOEM may also publish a DEIS for the CVOW project off Virginia later this month. Additional information will be posted here once it is available.
    - Council staff plan to work with New England Council staff on a joint comment letter. The Council may discuss the content of this letter during their December meeting. The Council provided comments on earlier stages of the CVOW project in August 2021.

- **Sunrise Wind:** BOEM may also publish a DEIS for the Sunrise Wind project off New York later this month. Additional information will be posted here once it is available.
    - Council staff plan to work with New England Council staff on a joint comment letter. The Council provided comments on earlier stages of the Sunrise Wind project in October 2021.
- **New England Wind (formerly Vineyard Wind South):** BOEM may also publish a DEIS for the New England Wind project off Massachusetts/Rhode Island later this month. Additional information will be posted here once it is available.
    - Council staff plan to work with New England Council staff on a joint comment letter. The Council may discuss the content of this letter during their December meeting. The Council provided comments on earlier stages of the New England project in July 2021.
- **Fisheries Mitigation Guidance:** Earlier this year, BOEM released draft Guidelines for Mitigating Impacts to Commercial and Recreational Fisheries, with a comment period that ended in August 2022. BOEM is now reviewing comments and developing the final guidance. More information is available here.
    - The Council previously provided comments on this topic in January 2022 and August 2022.
- **National Academies of Science Standing Committee on Offshore Wind Energy and Fisheries:** In October 2022, the National Academies of Science released a request for nominations for members of a standing committee to provide ongoing advice to BOEM on offshore wind energy and fisheries. The nomination period closed on November 9. More information is available here.

State Working Group on Fisheries Compensatory Mitigation Fund

Nine coastal states (Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland, and Virginia) have been advancing an initiative to establish a regional fund administrator for fisheries compensatory mitigation which would provide financial compensation for impacts from offshore wind development in the Atlantic Coast region. This effort focuses on supporting the BOEM Draft Fisheries Mitigation Framework by working to advance the establishment of an administrator that would collect, hold, and dispense funds to impacted members of the fishing community while creating a process that is fair, equitable, and transparent across the region and engages with the fishing and offshore wind industries. The states have developed and will be releasing a request for information to solicit feedback on the design of the fund administrator.

Council member Joe Cimino will provide an update on this initiative during the December 2022 Council meeting.

Seafreeze Ltd.

100 Davisville Pier
North Kingstown, R.I. 02852 U.S.A.
Tel: (401)295-2585

November 30, 2022

RE: BOEM and NOAA Fisheries North Atlantic Right Whale and Offshore Wind Strategy 2022; BOEM-2022-0066-0003

Our comments will focus mostly on the Draft Strategy's first goal, which is Mitigation and Decision-Support Tools. This is the most important section, as North Atlantic Right Whales (NARW) are at risk right now and not just in the future, and require immediate, implementable solutions in the face of current and ongoing wind development, project review, and project construction. Goal 2, Research and Monitoring, and Goal 3, Collaboration, Communication and Outreach, are acceptable future goals, but for a critically endangered species experiencing rapid decline in the now, are not the most critical aspect of the Draft Strategy.

The Draft Strategy states in the Mitigation and Decision-Support Tool section that its two primary actions will be to "Avoid" and "Minimize" impacts, as described in more detail in Appendix A. However, a quick read of Appendix A "Action" items contains only weakly worded actions such as "Periodically review", "Work to ensure", "Advance", "Develop", "Promote…Consider", "Support", "Develop approaches", Understand", "Explore", etc. There is nothing truly about Avoiding or Minimizing impacts, only lists of future aspirations. The approaches listed are essentially the same Goals 2 and 3 of Research/Monitoring/Collaboration in substance and provide no real, concrete actions that BOEM will take to preserve NARW in current and ongoing reviews or projects. Therefore, it is unclear how the Draft BOEM Strategy plans to actively address NARW impacts in the immediate projects undergoing review, or even projects that have already been approved.

The Draft Strategy is deafeningly silent on the one detailed recommendation from NOAA regarding NARWs and offshore wind- that of conservation buffer zones to protect the species, detailed in NOAA's May 13, 2022, letter to BOEM.[1] NOAA has provided a clear and implementable recommendation to ensure that population level effects are mitigated on a critically endangered species where the allowable PBR is less than one coastwide death, including those of Canadian origin[2]. The conservation buffer zone recommendation should not only be incorporated into ongoing DEIS NEPA review but also feature prominently in this Draft Strategy.

The fact that the conservation buffer zone recommendation has not been incorporated into this Draft Guidance makes it clear that BOEM has taken the lead on the Draft Strategy document, rather than truly engaging in interagency consultation and collaboration with the lead agency with expertise on Endangered Species Act (ESA) mammal protection. This is a disturbing trend throughout the BOEM process on many issues, which we highlight here and request that BOEM rectify. We submit that BOEM

[1] See "NOAA Scientists propose more protection for right whales in offshore wind area" here: NOAA scientists propose more protection for right whales in offshore wind area - The New Bedford Light, and letter, attached.
[2] See Copy of 09 2022 Scoping for Modifications to the Atlantic Large Whale Take Reduction Plan (noaa.gov); as of 2021, the PBR is 0.7.

does not have the expertise to accurately make these decisions or recommendations on its own, whether for fisheries, mammal, navigational, or other issues.

NOAA's May 13 2022, letter to BOEM regarding measures to protect NARW off of Southern New England would fit nicely into BOEM's "Avoid" category, i.e. "avoid the impact altogether by not taking a certain action or parts of an action or by modifying the action to avert impacts", which it defines on page 15 of the Draft. This avoidance should be incorporated into any ongoing EIS processes for leases in the Southern New England area and evaluate Alternatives that would eliminate this area from project footprints. It should also be applied to any projects currently approved but not yet constructed, per the ESA.

It would also seem that given the specificity of the recommendation, the new scientific analysis conducted to support the recommendation, and the significance of preservation of a critically endangered species, BOEM should also reinitiate ESA Section 7 consultation for existing projects that have already undergone ESA consultation pursuant to 50 C.F.R. § 402.16(a)(ii), which requires an agency to reinitiate Section 7 consultation whenever "new information reveals effects of [an] action that may affect listed species or critical habitat in a manner or to an extent not previously considered". As this information was not previously considered, relevant BiOps should be reopened and reevaluated, including that of Vineyard Wind and projects already approved.

The NOAA letter highlights the risk that offshore wind in Southern New England poses to NARW due to species abundance and distribution and focuses specifically on operational effects not previously considered but which cannot be mitigated for the 30-year lifespan of the project. The impacts identified in the letter are the result of offshore wind facilities merely existing in an area, not those resulting from facility construction, surveys, or vessel traffic/noise, which have previously been identified in BOEM analysis. It is a newly raised impact. The only identified solutions to rectifying operational impacts are (1) no build zones or (2) decommissioning, i.e., the absence of windmills.

NOAA states, "[O]ceanographic impacts from installed and operating turbines **cannot be mitigated for the 30-year lifespan of the project, unless they are decommissioned…**… **Disturbance to right whale foraging could have population-level effects on an already endangered and stressed species…. We anticipate that incremental movement on the scale of 20 km or more from the edge of Nantucket Shoals 30 meter isobath for initial proposed development, inclusive of WTGs and DC-convertor OSSs, would reduce the potential for negative consequences to right whale prey and the NARW population… We propose the buffer zone begin at the 30 m isobath, which corresponds with the predicted location of tidal mixing fronts in this region (Simpson and Hunter 1974, Wilkin 2006). A conservation buffer of 20 km also corresponds to the extent of the strongest impacts to depth-averaged velocity, salinity, and sea-surface elevation changes as observed in the North Sea, where the largest impacts extended 20-30 km and where turbines, both height and number, were much smaller than planned development in southern New England (Christiansen et al. 2022). Concentrating development to the southwest and creating a conservation buffer adjacent to the Shoals is expected to reduce risk by reducing overlap between high species distribution and concentrated areas of construction, operations and maintenance activities, including associated vessel traffic and potential changes in commercial and recreational fishing activity. We note that offshore wind maintenance and operational impacts would be for a duration of thirty or more years."**[3]

[3] Emphasis ours.

We have also highlighted for many years the difference in turbine size between what BOEM is considering and those of the studies it relies on from abroad. We request that BOEM and NOAA conduct new independent, peer reviewed analysis using modeling which incorporates the actual turbine sizes under BOEM consideration, with an updated evaluation of the requisite size of the recommended conservation buffer zone, as the larger turbines being planned for Southern New England are much larger compared to those in the North Sea used in the original recommendation and may require larger no build zones.

We also request that BOEM incorporate this 20 km no-build conservation buffer zone around Nantucket Shoals (and any larger area identified as a result of modeling larger turbines) to preserve the population of NARW in its Final NARW Strategy as an Action item under Goal 1 and include a chart of the conservation buffer zone overlaid on a NOAA nautical chart which includes existing MA WEA leases. We request that BOEM incorporate this conservation buffer zone into all project analysis in that area going forward, while reopening Section 7 consults per 50 C.F.R. § 402.16(a)(ii) to incorporate this new information/operational impact in projects where the Section 7 consultation has already occurred, including approved projects which have not yet been constructed.

In the Draft Strategy, BOEM alludes to certain issues identified by NOAA's May 13, 2022 letter, such as the "distribution and abundance of NARW zooplankton prey",[4] yet explicitly refuses to include reference to the letter or its recommendations in the Draft. This is despite the fact that BOEM's Draft contains references to other NOAA letters in the "References" section of the document.[5] It is clear that BOEM has deliberately excluded the May 13, 2022 letter from this Draft. Instead, it appears as if BOEM has hastily issued the Draft in order to deflect the actual recommendations that NOAA has proposed. This is an inappropriate agency position.

The second major issue with Goal 1 is the list of preliminary measures that BOEM has adopted "to avoid and minimize impacts to NARWs from OSW activities" during project planning/siting/leasing, site characterization and UXO surveys, and construction/operations.[6] BOEM includes measures in this list which it knows are ineffective at accomplishing this goal, as well alludes to process which it in fact does not have. This is simply unacceptable.

BOEM does not avoid NARW aggregating areas during its leasing or siting stages. It does not go through the EIS process prior to leasing or avoid NARW aggregations based on the analysis contained therein when siting leases. According to the Outer Continental Shelf Lands Act, BOEM should be conducting an EIS at the lease stage, as the legislation stipulates that when conducting any offshore wind development, the Secretary "**shall ensure**" that "**that any activity under this subsection is carried out in a manner that provides for…. protection of the environment…… [and] conservation of the natural resources of the outer Continental Shelf.**"[7] This would include conservation of a critically endangered species. If BOEM were complying with this legislative requirement, it would in fact be

[4] Page 17.

[5] See Anderson J. 2021. Letter to J.F. Bennett concerning the effects of certain site assessment and site characterization activities to be carried out to support the siting of offshore wind energy development projects off the U.S. Atlantic Coast (updated Sep 30, 2021). Gloucester (MA): U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 68 p. https://media.fisheries.noaa.gov/2021-12/OSW%20surveys_NLAA%20programmatic_rev%201_2021-09-30%20%28508%29.pdf., p. 27.

[6] Pages 15-16.

[7] OSCLA, 43 U.S.C. § 1337(p)(4), emphasis ours.

conducting analysis at the leasing stage and taking steps to avoid siting leases on locations important to NARW. However, it does not do this. BOEM does not conduct an EIS or initiate ESA Section 7 consultation until much later in the process. To pretend in the Draft Strategy that it is in fact conducting its leasing and siting to implement the requirements of OSCLA is both disingenuous and untrue.

Appendix B details the measures BOEM has "developed" to avoid and minimize impacts from the various stages of OSW. However, these are for the most part merely measures that BOEM has already adopted while knowing that they are ineffective to protect NARW. These include measures pertaining to UXO, pile driving, and passive acoustic monitoring. We have addressed these issues in our comments in the Revolution Wind Draft EIS, all of which we incorporate here by reference.

Appendix B's first section, "Site Characterization and UXO Surveys" purportedly contains a strategy to address UXO as relates to right whales. Page 40 reveals this strategy is to ""develop and implement standard protocols for addressing unexploded ordinances, including implementation of best available technology to avoid or minimize exposure of NARW and their habitats to low order (e.g. deflagration) or high order detonations or chemical release".

There are two problems with this statement/strategy. First, this statement ignores the fact that BOEM has no such authority. BOEM does not have the legislative authority to authorize UXO detonation/removal or to delegate that authorization to a third party, namely, a developer. BOEM cannot pretend to have authority that it does not have. The US Navy and the USCG, governmental agencies with the expertise and authority to handle UXO in the case of emergencies, do not even have the authority to delegate UXO removal/detonation/deflagration to a developer or even to BOEM. To indicate that BOEM possesses this authority is misleading to the public, and we request that BOEM make adjustments to these statements in the Final Draft Strategy and detail how it plans to overcome this obstacle with regard to addressing the very real threat of UXO to NARW.

Second, BOEM still has not begun to effectively estimate and analyze the impacts of UXO to NARW in current DEIS's undergoing review. If BOEM plans to only conduct vague, futuristic "Action" items listed for Goal 1, but fails to do something immediately for projects undergoing review, NARW will be placed in immediate jeopardy, which is unacceptable and violates the ESA. Under the Construction and Operation heading of Appendix B, BOEM lists only actions which have already proven to be ineffective for UXO or ineffective under current protocols absent more extensive measures, such as monitoring "clearance zones", "shutdown zones", "protected species observers", and "quieter foundations, technology, and methods…..including…the use of noise abatement systems (e.g., double bubble curtains".[8] Due to the massive area required to monitor for UXO detonation, it will be impossible to monitor under current methods, including protected species observers. It is this monitoring and detection that would inform clearance zones and shutdown zones. Furthermore, bubble curtains do not work for low frequency mammals such as NARW, according to BOEM's own data. It is insulting that BOEM continues to perpetuate the myth that bubble curtains will somehow mitigate impacts to NARW when this is blatant misinformation.

In the Revolution Wind DEIS, which just completed a public comment period, BOEM included a table provided by the developer that showed the distance to cumulative injury threshold for low frequency marine mammals is up to 2.65 miles away, and the distance to behavioral or cumulative temporary hearing threshold shift (TTS) effect threshold is up to 8.3 miles away from the detonation

[8] Page 41.

site.[9] . An 8.3 mile radius is a large area to monitor for every UXO detonation, and it is unclear how this could be monitored by protected species observers or methods other than passive acoustic monitoring (PAM) which does not work for NARW mother/calf pairs, as discussed below. However, a temporary hearing threshold shift for North Atlantic right whales could easily make these whales vulnerable to vessel strikes and other hazards while impaired.

Also noteworthy (and discussed below with regards to peer reviewed data) is the fact that that the above distances of 2.65 miles and 8.3 miles detailed by BOEM's chart in the Revolution Wind DEIS as distances from detonation site for peak and cumulative permanent and temporary hearing threshold shift (PTS and TTS) for marine mammals are calculated solely by a document paid for and prepared by the developer, entitled "Underwater Acoustic Modeling of Detonations of Unexploded Ordinance (UXO) for Orsted Wind Farm Construction, US East Coast."[10] BOEM did not use NOAA standards of cumulative threshold distances for NARW impact in the Revolution Wind DEIS, and instead relegated these distances to a mere footnote in deference to developer created data/spreadsheets, despite the fact that NOAA is a cooperating agency and the only federal agency with expertise in NARW analysis. The footnote of NOAA data reads, "NOAA uses the larger cumulative threshold distance to assess potential PTS and TTS exposure resulting from UXO detonation…PTS injury and TTS exposure acreages could occur within a 46,139 to 567,221- acre zone of potential exposure within and around the maximum work area for the RWF and RWEC, varying by hearing group and type of exposure."[11] According to NOAA, the cumulative threshold distance for PTS and TTS from the UXO detonation site is up to 886 square miles (567,221 acres). This would be virtually impossible to monitor using current methods. We request that BOEM incorporate NOAA data rather than allowing developer data to determine impact analysis for NARW and that BOEM explain in the Draft Strategy how it proposes to protect NARW in an 886 square mile when detonating UXO, as many current and upcoming DEIS plan to conduct such detonation. BOEM cannot continue to take the lead on NARW impacts and must allow the agency with expertise to drive the bus, particularly in the "joint" Draft Strategy.

BOEM has also omitted any analysis on non-auditory NARW impacts. Not all UXO detonation injuries or potential UXO-induced mortality is related to marine mammal hearing. The Revolution Wind DEIS states, "UXO detonation may also result in non-auditory injury (i.e. lung and gastrointestinal tract compression injuries)."[12] These impacts must be treated differently than hearing threshold impacts and contain detailed analysis, both in the Draft Strategy and in DEIS review, particularly for critically endangered NARW. The Revolution Wind DEIS, following this single sentence regarding lung and intestinal tract compression injuries, merely notes, "A detailed discussion of noise impacts on marine mammals is provided in Vineyard Wind final EIS Section 3.4.1.1.1 (BOEM 2021b)."[13] However, neither the Vineyard Wind Final EIS Section 3.4.1.1.1, "Marine Mammals", nor anywhere else in the Final EIS mentions UXO detonation. A word search of the Vineyard Wind Final EIS for the term "UXO" yields the result, "No matches were found". Therefore, the Vineyard Wind FEIS did not analyze UXO detonation at all- a major flaw, as the developer has already uncovered UXO in the project area during surveys. No

[9] Revolution Wind DEIS, p. 3.15-27; the chart states 14,009 feet and 44,291 feet, which are 2.65 and 8.3 miles, respectively.

[10] Hannay, D., and M. Zykov. 2021. *Underwater Acoustic Modeling of Detonations of Unexploded Ordnance (UXO) for Ørsted Wind Farm Construction, US East Coast*. Silver Spring, Maryland: JASCO Applied Sciences.

[11] Revolution Wind DEIS, p. 3.15-27, footnote #.

[12] Revolution Wind DEIS, p. 3.15-28.

[13] Revolution Wind DEIS, p. 3.15-28.

analysis on these impacts exist at the BOEM level, and such an omission must be immediately addressed, including reopening the ESA Section 7 consultation for Vineyard Wind. BOEM cannot continue to aspire to attain the lofty future Draft Strategy objectives of "Periodically review", "Work to ensure", "Advance", "Develop", "Promote…Consider", "Support", "Develop approaches", Understand", "Explore" while allowing NARW internal organs to implode in the meantime due to detonation of 1,000 lb. UXOs. It cannot issue permits that allow this to occur, and absent independent analysis and effective mitigation measures, it most likely will occur, leading to NARW deaths.

BOEM's Draft Strategy relies heavily on passive acoustic monitoring (PAM) as a mitigation measure in various applications, including various Action items, to downplay construction and vessel strike impacts on marine mammals, as well as UXO impacts. However, specific to North Atlantic Right whales, this also falls short of necessary protections. According to peer reviewed scientific data, North Atlantic Right whale mother and calves in particular exhibit "acoustic crypsis", i.e. they exhibit reduced calling rates and reduced call amplitude compared to other whales as a way to minimize the attention of predators.[14] PAM will therefore be an ineffective means of identifying and avoiding mothers and calves in an area slated for either UXO detonation or construction. We request that BOEM specify effective alternatives to this method of NARW detection, including over the 886 square mile impact zone for UXO detonation, in response to this peer reviewed science.

The Draft Strategy, Appendix A and B, as well as most BOEM DEIS analysis, continually rely on bubble curtains as a mitigation measure for reducing pile-driving noise, as well as UXO noise, on NARW. For example, the Revolution Wind DEIS concludes that bubble curtains will be effective at minimizing effects to marine mammals and ESA listed species from UXO detonation on page 3.15-11. Appendix F, "Environmental Protection Measures, Mitigation and Monitoring" lists bubble curtains on pages F-7 and F-8 as the mitigation measure for marine mammals related to construction and installation's impact and vibratory pile driving. However, BOEM already knows that bubble curtains do not protect North Atlantic right whales from impacts. Bubble curtains were designed to mitigate effects for high frequency marine mammals. At its Renewable Energy Program Update Briefing for the Mid Atlantic Fisheries Management Council on February 11, 2021, attached, BOEM's presentation openly stated, "Low frequency sound (<200Hz) is not reduced by the bubble curtain".[15] Therefore, as low frequency species- and identified by BOEM as such- North Atlantic right whales will not benefit from bubble curtains. Right whales' acoustic signals and acoustic sensitivity are below 200 Hz.[16] As such, North Atlantic right whales are at a risk of hearing loss and other permanent impacts despite the use of bubble curtains during pile driving and UXO detonation activities. This is not acceptable, and we request that BOEM remove all references to bubble curtains as any kind of NARW mitigation measure in the Draft Strategy, as well as from any ongoing project NEPA review/NARW analysis. We request that mitigation measures specific to low frequency mammals be instead analyzed and incorporated into the Draft Strategy and BOEM NEPA analysis.

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[14] Parks et al., "Acoustic crypsis in communication by North Atlantic right whale mother-calf pairs on calving grounds", *Biology Letters,* 16 September 2019, also attached with our comment.

[15] See https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/602d7bbd49ee2d06d9db12c4/1613593539206/05a_BOEM+Renewables+Program+Update+2021-02.pdf, p. 21 of 23. Also attached as part of this comment.

[16] Quintana-Rizzo et al., "Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development area in southern New England, USA", *Endangered Species Research,* Vol. 45: 251-268, July 29, 2021, p. 253.

The Draft Strategy mentions a commitment to peer-reviewed publications, data, and peer review of science and even the Strategy itself in various places such as an objective under Goal 3,[17] and an Action under Goal 2,[18] and as an oversight for monitoring studies.[19] However, BOEM is not using peer reviewed studies in its DEIS review and analysis now. In fact, it has not only omitted peer reviewed science from its DEIS analysis (when unfavorable to a developer), but it has actually relied solely on developer-created data for significant NARW analysis, in a clear conflict of interest. That is the opposite of independent peer review. The Draft Strategy is not consistent with actual BOEM process, and unless BOEM adjusts its process, is mostly meaningless.

For example, in the Revolution Wind DEIS, BOEM omitted any mention of the study "Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development area in southern New England, USA" by Quintana-Rizzo et al, published July 29, 2021 in *Endangered Species Research,* as well as any other research showing high concentrations of NARW in the MA/RI WEA. This information was peer reviewed, yet its absence was deafening. The Revolution Wind DEIS did not include the NOAA NARW density model, which we highlighted in our comments. BOEM cited one source- the developer's petition for an incidental take permit- as its only analysis for impacts to or takes of marine mammals as a result of UXO detonation as well as construction activities. It has not looked at any peer reviewed or NOAA data for these impacts. BOEM has clearly had no intention of using data other than that which promotes wind development. This needs to immediately be rectified, and we request that BOEM immediately incorporate the best available science, including peer reviewed NARW data and specialty NOAA data such as its NARW Density Model, explicitly into its analysis and this Strategy. We also request that the NARW Density Model results be included in all BiOps and reopened BiOps pursuant to 50 C.F.R. § 402.16(a)(ii) ESA consultation requirements.

Additionally, we note that BOEM studies are not peer reviewed and should not hold more weight in analysis than studies which are peer reviewed. Developer generated data should not be the sole source of analysis for any aspect of NEPA review or ESA review. In fact, it should not be a source of data at all, as it is a clear conflict of interest when analyzing the parameters of a project. We request that BOEM clearly differentiate between developer data and NOAA/peer reviewed data in all analysis/DEIS documents and remove agency reliance on developer generated impacts analysis to NARW.

Thank you for the opportunity to comment.

Sincerely,
Meghan Lapp
Fisheries Liaison
Seafreeze Shoreside, Seafreeze Ltd.

[17] Pages 19-20.
[18] Page 34.
[19] Page 42.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 30, 2022

To: Council

From: Jessica Coakley and José Montañez, Staff

Subject: Atlantic Surfclam and Ocean Quahog (SCOQ) Species Separation Requirements Amendment

At this meeting, the Council will review public input gathered on the draft amendment, review Committee recommendations, staff recommendations, and consider final action on the amendment.

The following is included for Council consideration on this subject:

1) SCOQ Committee Recommendation Summary (December 2, 2022)

2) Staff Recommendations Memo (November 30, 2022)

3) SCOQ Summary of Comments (Comments received through November 23, 2022)

4) Additional SCOQ Written Comments (Comments received November 28-29, 2022)

5) SCOQ Species Separation Requirements Amendment (October 2022 Draft)

Atlantic Surfclam and Ocean Quahog Committee Recommendations Summary
December 2, 2022

The Mid-Atlantic Fishery Management Council's (Council) Atlantic Surfclam and Ocean Quahog (SCOQ) Committee met via webinar on December 2, 2022, to review public comment received on the draft amendment to address species separation requirements in the Atlantic surfclam and ocean quahog fisheries. The Committee developed recommendations to the Council, to be presented to the full Council later in December. The following provides a summary of the Committee's Recommendations.

Committee members present: Peter Hughes (Committee Chair), Maureen Davidson (Committee Vice-chair), Joe Cimino, Sonny Gwin, David Stormer, and Jay Hermsen (GARFO).

Others present: Michael Luisi (Council Chair), Jessica Coakley and José Montañez (Council staff), Doug Potts (GARFO), Tom Alspach, Peter Himchak, Roger Mann, Samuel Martin, Joe Meyers, Dave Wallace.

The Chair made introductory remarks and reviewed the agenda and noted that he was glad the Council was able to extend the public comment period for a few days. Staff presented on the amendment and provided an overview of public comment received on this amendment. Following meeting discussion, the Committee passed one motion.

Committee Motion

Move to delay final action on the Surfclam and Ocean Quahog Species Separation Requirements Amendment and task the FMAT with defining a percentage of mixing tolerance/allowance for both species in cages for an upcoming 2023 Council meeting. This action should be considered for inclusion on the 2023 Council Implementation Plan.

Gwin/Cimino
Passed by unanimous consent of SCOQ Committee

Summary of Discussion during the Committee Meeting

Committee and the Public:

- It was asked how extensive the mixing problem is? Information suggests it could be anywhere from a little to a lot depending on locations.
- It was also asked how easy it would be to sort on board the vessel? It was noted that depends on the vessels and how they are configured. It may be easier for the smaller vessels than larger vessels, but it was noted as challenging.

- It was noted that the current mixing at present can result in under or overreporting of these two species in the cages.
- Aspects of the sorting process were discussed and some of the challenges associated with it. At present there is a level of active avoidance that is keeping the present numbers to estimate mixing low.
- There were also questions about what is being recorded in the VTRs (logbooks at present) and it was noted that the discard of non-target clams is not recorded. There was comment on some of the suggestions for how to create estimates of mixing in the comment letters.

Public:

- The abatement of enforcement would allow time to explore other options. If the VTRs could be modified, then the proper accounting could be addressed on the VTRs. The more you investigate the commingling issue, the more complex it becomes, a simple solution is not going to solve this problem. Industry cannot support any of the alternatives in the document. The difficulty with sorting at sea will continue to worsen. This amendment is not ready for taking final action in December, and the industry would like to work with the FMAT to come up with solutions that are more reasonable.
- Processors do not process the clams together - they process them on separate systems [processing lines] that require the clams be separate. The accounting would need to take place at the plant or on the VTRs. At this point, do not think any of these alternatives are ready for final action.
- The most important thing the industry is looking forward to is not remaining in legal jeopardy with enforcement. The Council/NMFS should suspend the legal mandate while the industry works with the FMAT to come up with a solution.
- Just following up on other comments – the disincentive issues – there is the enforcement issue and there is also not a desire to sort at the plant as the species must be processed separately. If enforcement was suspended, there would not be a rush on mixed loads and the plants do not want to deal with sorting at the plant. Price would be cut if mixed loads got out of hand. There are too many unknowns for the Council to take final action. Slowing down onboard operations to sort clams would be expensive and those costs and the costs of implementing port sampling are not well enough developed. This is not an urgent issue as this is not a resource issue and there is time to do this right.
- Do not think that any of the alternatives would work. We largely have a bycatch issue; every other fishery has a bycatch allowance, and we really need more time to figure this out by suspending the zero tolerance. The amount of mixing is extensive and it is impossible to sort out the volumes of mixing – think this is a bycatch issue and without some level of suspension on zero tolerance.
- Alt. 4 could work in the background, but it addresses the accounting but does not address the separation issue.

Committee:

- With Alt. 3, having to dump clam cages out to go through may create issues with the with FDA and HACCP (time/temp issues for the clams). That should also be taken into consideration.

- This tolerance for mixing of clams in the cages is the area to focus on. There could be consideration of suspension of the mixed clam exemptions and then ask the FMAT to analyze some percentage of tolerance.
- There could be an opportunity for an Exempted Fishing Permit (EFP) to allow for mixing within cages, with shore side sampling to sample and validate the mixing.
- It was noted that tolerance can be difficult on the enforcement end. There was some discussion about the difficulty of enforcement, and staff noted that discussions with OLE during the white paper development indicated that at present the fishery enforcement of cage contents is mainly based on tagging. Enforcement is not dumping cages or going through them making.

Public:

- Commentor liked the idea of an EFP but noted that you would need to give it to the entire fishing industry. Addressing the enforcement tolerance is a simple short-term solution, and the industry will evolve into what it needs to do. This is not a sustainability issue and then let's evolve the industry over time to manage climate change and be able to prosecute this fishery.
- Some processors only want surfclam. This species separation requirements issue goes back decades (Amendment 8). Is it too much to ask the committee to not take final action. If you go in front of the Council, you may have a lot of Council members that do not understand the problems and a quick vote could be taken. Do the committee members really understand this and the complexity of the problem – not sure.

Committee:

- Understand the concerns of industry – this is a problem that we have never had before. This is a new problem – and I can see where the industry does not feel these alternatives are in the best interest of the industry. Also concerned about enforcement and accounting for the species catch. If we are going to contemplate putting off a vote for final action – would like to know what are our next steps? Do not think we can just say no action – if we had some definite end points would feel more comfortable with a no action vote. Where would industry like to see this in 6 months?
- Industry brought this issue to us, so they are going not simply suggesting a status quo and no action on this issue over time. This is not a resource issue – its an accounting issue. Do not think industry is in favor of no action – they are in favor of suspending the prohibition of mixed clams while trying to determine a tolerance.
- It would be good to know at what level of underreporting does this become a resource issue; that would be useful for the Council to know.
- The Committee needs to provide additional guidance to the FMAT if the mixed clams are exempted from enforcement with a tolerance built in, while we develop a better solution with climate change.

Public:

- To the concern of committee, if we suspend enforcement we need to move toward some level of accounting even if we think there is no level of threat to the resource. In written comments, acknowledged how some reasonable empirical estimates could be done. We

use reasonable estimates in our stock assessment and projections, and we do this using reasonable estimates accepted by peer reviewers. We should have a basis to estimate how much additional resources is being accounted for because of mixed landings. We could come up with an estimate to use in our accounting for the quota.

- Want to follow up on what the future might look like from an industry perspective. There is a conflation of separation and identification – and suggest we move away from separation to using the term identify. As an industry, we will need to address the separation issue, but if we can move forward with an identification and accounting approach that should be the focus as we move forward.
- This is a bycatch issue, and we have mechanisms already in place to account for bycatch. Suspect that there is a way to study the risk to the fishery – conduct a management strategy evaluation (MSE) to look at different levels of mixing and different levels if quota utilization to see if an issue emerges.
- Public comment: In the comments from LaMonica, noted that alt. 4 might be the long-term solution, but what do we do in the meantime. And that is why we need to get out from under this legal jeopardy. The degree of commingling varies by processing plants as well. Industry is looking for some breathing space and get out of legal jeopardy and get in the trenches with the FMAT.

Committee:

- Alt. 4 is based on the funding of some EM work. This alternative would still be running in the background.
- Coming up with a time certain for addressing this issue would be helpful.
- The committee discussed whether it was appropriate to recommend removal of other alternatives such as 2 and 3 from the action would be warranted.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 30, 2022

To: Chris Moore

From: Jessica Coakley and José Montañez, Staff

Subject: Atlantic Surfclam and Ocean Quahog Species Separation Requirements Amendment: Staff Recommendations

At the December Council Meeting, the Council will consider final action on the Atlantic Surfclam and Ocean Quahog Species Separation Requirements Amendment. Staff recommend that the Council select alternative 2 as detailed in Table 1 as the preferred alternative. Staff recommend alternative 2 for the reasons discussed below.

The surfclam and ocean quahog fisheries have an associated robust catch data collection infrastructure which support the stock assessments as well as an Individual Transferrable Quota (ITQ) monitoring program which tracks allocation utilization. Surfclam and ocean quahog are not overfished, and overfishing is not occurring, and at present less than half the quota is being utilized. The specific problem addressed by this amendment is that some unknown amount of non-target surfclam and quahog are being caught and mixed in cages onboard vessels that are declared as fishing for surfclam or quahog only. Any non-target clam species that are discarded on board the vessel (before entering cages), or those that end up in cages and are disposed of (or utilized) at the processing facilities are currently not reported in either the vessel trip reports or dealer data, respectively. Allowing for an unknown mix of the two species within cages without extensive sampling is a problem because the reporting system to track and enforce the quotas is strongly linked to the ITQ cage tags. In addition, separate analyses conducted by the NOAA Fisheries Northeast Fisheries Science Center and the Science Center for Marine Fisheries suggest the extent of mixed surfclam and quahog beds is extensive. As a result, this problem is likely to worsen over time.

Alternative 2 addresses these issues in the short-term. Under this alternative, vessels would be allowed to land both species, but those clams would need to be sorted and tagged to account for the amount of each species and allow for tagging of the cages. Under alternative 2, each vessel can develop their own onboard operations to make choices about where they fish and how they sort the two clam species and place them in tagged cages. Industry has indicated that the vessels are all configured differently, and the processors all have different needs. This alternative would allow each operator to develop specific sorting practices that work for them. If industry wants to employ mechanical sorting technologies over manual/crew-based approaches, they could develop these for their own vessels.

Although alternative 2 may be the best short-term solution, it is important to also consider longer term solutions to the issue. One possibility is alternative 4, which proposes the development of an Electronic Monitoring (EM) program to visually count the two clam species before they enter the cages. In fact, a project has been funded to test the technology during the 2023 NEFSC clam survey.

Table 1. Summary of the alternatives.

Alternatives	Brief Description of Alternatives
Alternative 1 (No Action/*Status Quo*)	No changes would be made to the current regulations for surfclam and ocean quahog.
Alternative 2 (Allow Combined Trip Declaration and Require Onboard Sorting)	Current requirements would be modified to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. Under any of the trip declaration categories (i.e., Surfclam only, Quahog only, or Combined Surfclam/Quahog Trip), onboard sorting will be required.
Alternative 3 (Allow Combined Trip Declaration, Mixing of Clam Species within Cages (on a Declared Combined Trip), and Require Manual Port Monitoring of Declared Combined Trips)	Current requirements would be modified to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. On a declared combined trip (i.e., a fishing trip that is allowed to land both surfclam and ocean quahog) the mixing of both clam species within the cages would be permitted with the implementation of a new NOAA Fisheries sampling program to assess catch composition.
Alternative 4 (Allow Combined Trip Declaration, Mixing of Clam Species within Cages (on a Declared Combined Trip, and Require Electronic Monitoring of Declared Combined Trips)	Current requirements would be modified to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. On a declared combined trip (i.e., a fishing trip that is allowed to land both surfclam and ocean quahog) the mixing of both clam species within the cages would be permitted with the implementation of a new onboard electronic monitoring (EM) program to assess catch composition.

Atlantic Surfclam and Ocean Quahog
Species Separation Requirements Amendment

Summary of All Comments Received from
October 6 – November 23, 2022

The following provides a summary of common themes provided in both the written and public hearing comments regarding the Species Separation Requirements Amendment – Public Hearing Document. Please see the summary of public hearing comments and the complete written comments for additional detail.

Comment Period: October 6 to November 29, 2022 (5pm EST). This summary only includes comments through November 23; written comments received after this date will be provided as a supplemental material.

Number of Written Comments Received: 2 comments were received as of November 23.

Number of Public Hearings (2):
- #1 Philadelphia, PA – Thursday, November 10
- #2 Westport, MA – Monday, November 14 (Cancelled due to travel disruptions)
- #3 Webinar – Thursday, November 17

Attendance at Hearings: 16 persons in attendance cumulatively at the 2 hearings (excluding hearing officers and Council Staff); comprised of 14 individuals/people (i.e., some people attended more than 1 hearing). Eight sets of oral comments were made at the 2 hearings.

High-Level Themes

- The requirements that clam cage contain a single clam species (surfclam or quahog) should be suspended and there should be some tolerance for mixing of both clam species in the cages.
- This issue is not about sustainability, but enforcement. There is no risk to stock sustainability by suspending the requirements to allow for mixing in cages.
- Suspending enforcement in the short-term would allow more time for the development of other solutions (e.g., electronic monitoring (EM) to visually id clam species, mechanical sorting equipment, etc.).
- Commentors were generally not supportive of action alternatives 2 and 3, but some commentors spoke in support of alternative 4, while others did not support 4 because EM is not guaranteed to work.
- Some commentors suggested mixing in the cages should be allowed and estimates of clams caught/discarded could be provided (e.g., such as on Vessel Trip Reports (VTRs).

Public Hearing #1: Atlantic Surfclam and Ocean Quahog Species Separation Requirements Amendment
Thursday, November 10, 2022

Embassy Suites Philadelphia Airport, 9000 Bartram Avenue Philadelphia, PA, 19153

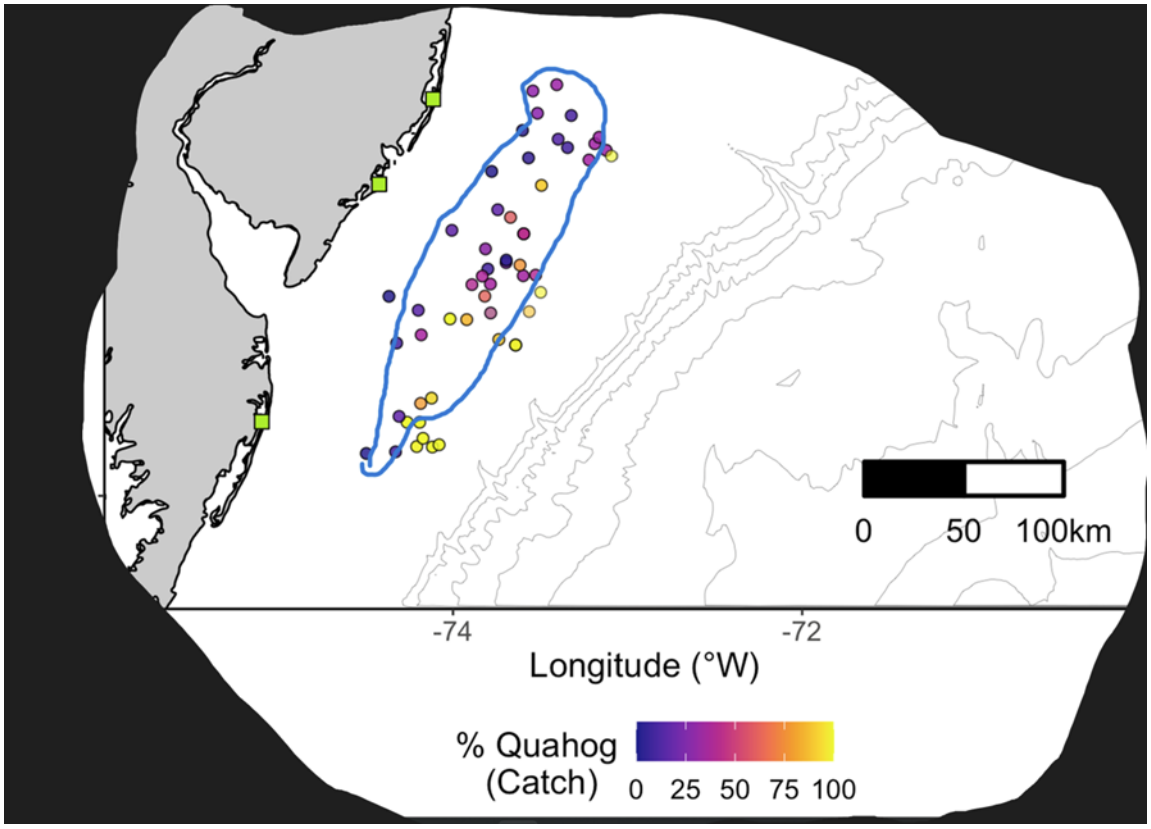
Council Hearing Officer: Michelle Duval
Staff: Jessica Coakley, José Montañez
Attendees (SCOQ Advisors unless noted otherwise): Tom Alspach (Sea Watch International), Tom Dameron, Peter Himchak, Sam Martin, Daphne Munroe (Rutgers University), David O'Neil, and David Wallace.

6:30 pm – The hearing officer read opening statement regarding public hearing meeting. Staff made a presentation covering background information and the public hearing document. Staff answered several questions about the document and the alternatives. The meeting was opened for public comment input. The hearing officer asked speakers to state their names and organization (if applicable) and to be specific in their input in terms of what alternatives do they support, or not support, and provide other specific details.

Sam Martin, Atlantic Capes Fisheries

- Company presently operates surfclam vessels and that are now bumping into ocean quahog ground. Noted there is a bigger problem than previously thought and believes handling this issue with a zero-tolerance level is not possible.
- This is not a biological problem; it is an enforcement problem.
- Processing plants cannot take mixes of clams - every plant has a different way of doing things, and surfclam and quahog meat cannot be mixed in the product. It must be separated.
- Alternative (Alt.) 2 will not work because of the microscope of enforcement. It will also create regulatory discards. Alt. 2 will not work unless the zero-tolerance level for mixing in cages is eliminated or a tolerance level is implemented. The mixing problem for the region is over 90% of the area – as shown in the image provided by SCEMFIS.
- Alt. 3 will not work whatsoever. There is not a dock that can accommodate the dumping of these cages. It would be expensive to implement and a logistically an issue. This would not work suspension of enforcement and suspension of the mixing prohibition is adopted.
- Alt. 4 cannot be selected right now. Under Alt. 4, you still have the problem of zero-tolerance. It's not guaranteed to work.
- These alternatives were not fully vetted and did not come back to the AP; the AP and industry have several questions.
- This is a problem because of climate change. Industry does not want this problem and time is needed to fix it. Recommend no decision for 6 months or a year, to provide time to work with enforcement to fix this. Recognize that currently the mixed issue is not been getting enforced, but now the curtains are opened and have to deal with it.
- Atlantic Capes is a surfclam processor only – cannot presently take quahog cages only but need the opportunity to explore other options for those cages. Do not want to deal with mixed cages.

- Suspending enforcement in the short-term and allowing development of EM approaches would not hurt the quota whatsoever. There is no threat by requesting that the suspension of zero-tolerance for any type of mixing. This could stop regulatory discards that are happening right now. The measures need to be suspended because you can't just say it is not being enforced.



Tom Alspach, Sea Watch International

- Represented company is a processor of both surfclam and ocean quahog. We see the opposite side of the vessels, as we only process the animals. We have never seen zero surfclam or ocean quahog – there is always some mixing.
- Need to cull out surfclams and quahogs out at the plant. Noted that it is very expensive to have to deal with this mixed clam problem. There is not an incentive for any boat or processor to want to harvest a mixed species. The issue was thrust upon us. We try to avoid having mixed catches but have not been perfect in doing so.
- Does not support Alt. 2 or 3.
- Under Alt. 2, what happens on a boat but would also affect what happens at the plant. The boat must make an economic living to stay in business to supply the shell stock. The amendment noted that onboard operations may need to slow down to sort – what does that mean? How much does it need to slow down. Do operations have to stop? This has not been vetted directly with the fishing captains. The margin is very thin for making money on these trips.
- Alt. 3 includes the idea of dumping some or all the cages. Someone will have to be at the dock going through the clam cages. There is no dock space. The expenses would be huge. There may be FDA issues. There is no evidentiary basis for the cost that is

given there. It's unreasonable to adopt an alternative without knowing the full cost. This suggests the need to count every single clam to account for the resource.

- Stock assessments don't count but instead provide an estimate of the clams that go back over the side. We use an estimate in the assessment. An estimate of additional clams of another species that are harvested could be identified and used for an interim time for a few years. The best estimate for nontarget catches for both species, on page 27 and 28 of the amendment document is just a few percent. One could choose reasonable estimate and apply that to the projections. Stop the belt every 4 hours or so and make an estimate of both species. That estimate won't really change anything. If all the quotas were caught it wouldn't affect the stocks.
- Alt. 2 and 3 are not practically feasible nor financially feasible.
- For a period, the requirements should be suspended to allow for some tolerance for mixing. There would still be no incentive to bring in mixed species.

Staff asked a question: You are suggesting the belt be stopped every few hours to get a count and proportion of clams. How do we account for that with the ITQ system? What would be your solution to reporting and tagging cages. There was brief discussion about this. ***Sam Martin:*** There is an estimate of how many cages are coming in. If you continue with the tagged program, you will still need to tag surfclam, and just need to estimate the quahogs. There would still be a need for some mixing in the cages. Many other fisheries use estimates for discards and what is brought back. ***Tom Dameron:*** If you haven't separated them, assume you have 100 cages and 7% are OQ, you would then tag 100 cages of SC then would need 7 tags of OQ. This will result in overreporting of surfclam. ***Tom Alspach:*** The problem with the mixing is paying for surflam prices for quahog meat. ***Sam Martin:*** Another approach may be to move away from a tagging program to an accounting program. There is still a need to be able to separate the clams at the dock. It will eventually get to an accounting process. The mixing is not going to work for the plant. To address this issue, there may need to be a change in how things are caught and a change in how things are reported. The fisheries are not near the total allowable catches, so think there is a way to get to the point to solve these as an industry along with technology, along with grant funding. But in the meanwhile, we cannot be under this enforcement microscope. Staff asked another question: Was the vessel stopped or slowed down for sorting for the minimum size in the past? ***Dave Wallace:*** The captain would stop and take a sample, and then if there were undersized clams, they would move on to another area. If there were a lot, they would run the machinery to get the smaller clams out. ***Sam Martin:*** Noted that the mechanical rolling sorting is not useful for separating species - are running into issues with the same size surfclam and quahog.

David O'Neill, Advisor

- Noted still here learning about these issues but felt its clear there is a need to end zero-tolerance.
- Was going to say liked Alt. 2, if there was an effective sorting system that could go on the vessel. Alt. 2 is not going to working until an onboard sorting technology is proven to work.
- Processing plants are doing their best to separate the clams the plant. You could get data about mixing from the processing plants.

- There are not any biological concerns at this point. There were mixed beds historically that have been avoided by the processors. This may open new areas up to dredging that can be degrading and have some ecological impacts.
- Approaches that involve the dumping of cages should be avoid.

Peter Himchak, LaMonica Fine Foods

- Noted they will be submitting written comments.
- Stressed how robust the resources are.
- Alt. 2 is impracticable. Alt. 3 is not defined to the point that its clear what they are commenting on. Under Alt. 4, there is a question about what legal constraints the industry will work under while this is being developed. That's a question – please give a heads up to legal counsel.
- LaMonica only processes surfclams so having quahogs in a cage is a problem. But similar to Sam Martin, we need to explore new fishing grounds.

Dave Wallace, Advisor

- Support what everyone else has said.
- Need to suspend this notion of zero-tolerance. Even if you separated them, the wrong species is going to go into the other cages and then zero-tolerance is not met.
- Enforcement has been reasonable, but they have a job to do. Was around when there was a surfclam minimum size limit – if you hadn't irritated an enforcement office, they left you alone. You can go over 55 mph (driving), and it's the discretion of the officer to let you be. Those that pushed back on the regulation hurt everyone else.
- Need to get rid of the zero-tolerance and then conceivably, you can run those clams overboard or run them into a cage. We would be lucky if we get 80% of the target in a cage.
- For now, we need to cancel this zero-tolerance level and then explore EM solutions. We need a system that is workable and none of the alternatives do that.
- Also, there was the notion of counting 250 clams for an undersized violation – when they got 251, they seized the load.
- In this case the companies are all vertically integrated. All they are going to do is seize the boat and put the boat out of business.
- Industry is between a rock and a hard place. A doable system is needed.
- The enforcement office should choose to do this with just a reasonable tolerance, otherwise the boats and processors will go out of business.
- Different processing plants and hand shuck operations have different needs and problems. The hand shuck plants just throw the quahogs away. The industry brought this to the governments attention to get them to fix this problem – but they forced the MAFMC to deal with excessive shares action first. This issue is one big factor, with a bunch of subfactors to be addressed.

Public Hearing #3: Atlantic Surfclam and Ocean Quahog Species Separation Requirements Amendment
Thursday, November 17, 2022

Online

Council Hearing Officer: David Stormer
Staff: Jessica Coakley, José Montañez, Mary Sabo
Attendees: Deirdre Boelke, Maureen Davidson (Council Member), David Dow, Peter Himchak (Advisor), Ron Larsen, Chelsea Miller, Joe Myers (Advisor), Doug Potts (GARFO), and David Wallace (Advisor).

6:00 pm – The hearing officer read opening statement regarding public hearing meeting. Staff made a presentation covering background information and the public hearing document. Staff answered several questions about the document and the alternatives. The meeting was opened for public comment input. The hearing officer asked speakers to state their names and organization (if applicable) and to be specific in their input in terms of what alternatives do they support, or not support, and provide other specific details.

Joe Meyers, Sea Watch International

- Speaking as the Director of Innovation and Sustainability and recently appointed to the Advisory Panel. Been involved in SCOQ fisheries for a decade or so.
- There are a few places in Amendment 8 and in the 50 CFR where species separation requirements exist. More detailed will be provided in the written comments that will also be submitted.
- The proposed amendment as presented does not adequately address the issues faced from a cost implementation perspective and does not address impacts on sustainability. Provisions for separation and identification are not needed for the sustainability of the fishery.
- Alt. 1 is not a viable path forward. The mixing of clams will become more of an issue. Alt. 2, 3, and 4 do not have specific implementation costs.
- This level of precision and separation is not needed to maintain the sustainability of the fishery. Deal with uncertainty all the time. It doesn't seem like this level of separation is required. There are going to be some misses when this is implemented. The precision that is required needs to follow along with the technology. This fishery has low levels of bycatch. The highest level in the data, if the bycatch was expressed as a quota amount it would be about 1.6%. The level at which the fishery operates doesn't presently present any risks. Ocean quahog quota utilization is low, so poses no biological risk.
- Recommend a Management Strategy Evaluation (MSE) be conducted that looks at different levels of mixing on the boat, and different quota scenarios to be conducted by the NEFSC. Also requesting suspension of the enforcement action until we can determine the risk of this mixing, and that would allow the industry to address this mixing as it comes. One of the ways we propose to better quantify the risk.
- There is overreporting one species at the expense of underreporting the other. The suspension of enforcement and VTR forms would provide time to develop a risk assessment approach to fishing.

- SCEMFIS recently funded the ability to develop GIS layers to look at the extent of mixing.
- Industry is also looking at different sorting technologies that are applied in agricultural commodity settings. The costs need to be better understood.
- There could be some combination of Alt. 2 and 3, that would allow some sorting on the vessel and some to occur at the processing plant. Sorting is a challenge for both the boat and processing facilities.
- Also ask that the language used be more specific about sorting and species differentiation.
- The timeframes and costs for the approaches are somewhat unknown. We need to better understand the costs and have the flexibility to address this issue as an industry.
- In summary, the request is for:
    - Suspension of enforcement for zero-tolerance.
    - VTR reporting to address mix landings (and quantify the catch); mixed landings proposals won't achieve what we are trying to do.
    - Commission an MSE as well as fund projects mentioned for GIS.

Staff asked a question: To what extend in the mixed landings currently being reported on VTRs? **Joe Meyers**: Did not have those figures on hand to provide.

Peter Himchak, LaMonica Fine Foods

- LaMonica hand shucks surfclams.
- Already spoke at one hearing but will repeat that none of the 4 alternatives are acceptable.
- Alt. 2 is impracticable onboard the ships.
- Alt. 3 and 4 are not presently well enough defined to support and alternatives. Alt. 4 may be the long-term solution, but that's not something that is going to happen right away.
- In the meanwhile, the Council can deal with the enforcement suspension of zero-tolerance.
- It's something that can be dealt with outside the amendment.

David Dow, Public

Question in chat: Since the surfclam/ocean quahog fishery is moving into southern New England, how will the MAFMC enforced Alt. 2? Response: NOAA Fisheries/OLE will enforce the measures under any of the alternatives including what they do under no action. There may rely on cooperatively agreements to enforce regulations with some state agencies.

David Wallace, Advisor

- Noted that a clam of another species in a cage would be a violation. There is this requirement to have 100 percent separation but would be astounded if you could find a sorting machine that would be 80 or 90 percent effective.
- If the industry is not allowed to have another species on the vessel, they will be forced to go into areas to fish where the population is not mixing but the population may be very thin.

- Cannot support Alt. 1, 2, or 3 because they do not have any exceptions to clams being mixed in a cage and they must be completely separated.
- Do not want to get involved in nit picking with the enforcement agents.
- Enforcement was an issue decades ago when quahogs tags were cheap and surfclam were very expensive, so quahog tags were put on surfclam cages. We do not have this enforcement problem now and will not have this problem in the foreseeable future.
- No matter which group is working on Alt. 4, all the sorting would need to occur at the plant.
- Need a workable agreement and there is no problem with sustainability. These fisheries are not grossly overfished. The quotas could be higher on both surfclam and quahog.
- Noted that based on the number in the amendment, you only have 1.5 percent of mixing, it is hard to imagine that is done intentionally.
- Cannot afford to carry a large crew to sort because it is very expensive; cannot just add enormous costs on the current system.
- This is a very limited fishery in that there are about 30 boats that fish for SCOQ in the MAB, so there are only a few boats, but they cannot afford $200,000 sorting machines.

From: Paul Olinski
To: Coakley, Jessica
Subject: SCOQ species separation
Date: Friday, November 18, 2022 4:41:06 PM

I am not involved in the fishery, but I believe Alternative 2 (two) sounds the most reasonable and applicable for all involved. Paul O.

Sent from Outlook

From: Coakley, Jessica
To: Coakley, Jessica
Subject: Comment from Rome 10/25/22
Date: Wednesday, November 2, 2022 11:16:08 AM

From: MONTE ROME
Sent: Tuesday, October 25, 2022 9:13 AM
Subject: Re: Message to Jessica concerning Nantucket Shoals

Good Morning Jessica,

I will be joining on Nov 14 meeting in Westport. Please note.

In review of your enclosed document, I noticed that it referred to the 'Panel of Experts' who assembled as the Northeast Region Essential Fish Habitat Steering Committee of 2001 in order to examine the impacts of mobile fishing gears used in the Northeast region. This study, published in 2001 concluded that surf clam dredging is the least harmful to the suitable habitats for prosecution of the fishery by comparison to scallop dredging and otter trawl dragging which are conducted in the Northeast.

Most importantly, the conclusion from the 'Panel of Experts' that surf clam dredging had the most minimal disturbed bottom and SASI record of the 3 fisheries examined is crucial for the NEFMC to embrace. The egregious rule making affecting the New England Surf Clam Industry working on Nantucket Shoals, enacted by NEFMC (with MAFMC's ostensible abstention from the argument), has affected all aspects of the New England portion of the Surfclam Industry and must be immediately reviewed in light of this 'expert' study.

Bearing out the conclusion of the 'Panel of Experts' was the recent EFP 19066/habitat study conducted in 2021/22 by the Coonamessett Farm Foundation. This study established that the use of the GSCHMA for 104 surf clam trips utilized less than 1 square mile of habitat bottom and generated approximately $800,000.00 in x-vessel revenue over the study. This type of revenue generated from the minimal use of the HMA constitutes the most productive mobile gear fishery per square area of seabed impact at work in today's fisheries. This area amounted to .0014 of the GSCHMA - or a negligible use of the bottom of this protected area. It remains of great significance that the Nantucket Shoals area is the only place in the Northeast to harvest commercial quantities of surfclams in New England. The maintenance and productivity of the Nantucket Shoals is an essential management council requirement of the Magnuson Act in Magnuson's dictate for lead councils (MAFMC) to maintain the OY in the fisheries they manage.

As I look at the stats in Table 1, 1999-2021, it is essential that all of us on the surf clam advisory panel realize that the trend of landings indicate that the surf clam fishery is near economic collapse and operating at less than half volume of raw materials needed. The clear trend in landings indicate that it will be only a matter of time before severe economic problems will occur as the lack of raw materials

continue to erode the ability of all processors to maintain their surf clam businesses. The Nantucket Shoals area could produce a 25% portion of the needed OY when we regain our right to harvest there. Additionally, opening Georges and Closed Area 2 to routine fishing could provide the best approach to stability in the surf clam fishery if the overly restrictive requirements are lifted.

I hope this bit of data inspires you and the MAFMC to initiate a sincere and full effort to regain management control over the Nantucket Shoals as an essential harvest area for the Fishery. Without question, renewed control by the council that understands the Fishery will contribute to the stabilization of the U.S. Surf Clam Fishery as Magnuson dictates. We need the immediate and unwavering support from the full council in support of our Industry needs.

Best regards,

Monte

Sea Watch International, Ltd.
8978 Glebe Park Drive ◆ Easton, MD 21601

Sales: 410-820-7848 ◆ 800-732-2526
Fax: 410-822-1266

November 29, 2022

VIA ELECTRONIC MAIL

Chris Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 19901

Re: SCOQ Species Separation

Dear Mr. Moore:

On behalf of Sea Watch International, Ltd. I am submitting the following comments regarding the pending FMP amendment addressing the harvesting of mixed clam species. Sea Watch is the largest processor of federal surfclam and ocean quahog shellstock in the US, and its operations would be affected directly, in a negative fashion, by the pending regulatory alternatives that we believe need further investigation and refinement.

The incidental harvesting of quahogs on surfclam trips, or of surfs on quahog trips, does not in any manner threaten the long term sustainability of either resource. The F for both species is so low per NEFSC (1.5% for surfs; less than 1% for quahogs) that mixed harvests do not and will not affect peer reviewed long term stock projections.

The incidental harvesting of quahogs on surfclam trips, or of surfs on quahog trips, does not pose any risk that the quotas for either species will be exceeded. Overall harvesting levels remain at less than 50% of both quotas, and there is no reason to suspect this will change appreciably in the foreseeable future.[1]

If it is nevertheless deemed necessary to "account" for the full extent of respective harvests, this can be done responsibly through reasonable estimates, just as reasonable estimates

[1] Moreover, to the extent "uncounted" surfclams are harvested on quahog trips, these effectively offset the "over counted" surfclams on surfclam trips, where a small portion of those "surfclam" harvests actually are mixed in quahogs. The reverse is true with accounting for the overall harvests of quahogs.

this can be done responsibly through reasonable estimates, just as reasonable estimates are employed in our peer reviewed stock assessments and projections. For example, stock assessors cannot actually "count" every clam that is lost each year to natural mortality, so an accepted estimate is employed. Stock assessors cannot count every clam that is lost to discard mortality, so again a standard estimate is employed. These estimates, and others, have never prevented peer reviewed approval of our stock assessments and projections.

Similarly, a simple approach to "accounting for" mixed harvests would be to rely upon a reasonable estimate of the volume of "miscounted" clams of each species resulting from mixed harvesting. There are multiple ways to do this; here are just two:

1. Employ the reported bycatch calculations of independent observers from federal observed trips at sea. The most recent independent bycatch findings are reported at pages 26-30 of the hearing document. Federal observers have found that about 1.5% of the harvest on surfclam trips actually are quahogs, and under 1% of harvests of quahogs actually are surfclams. To be conservative, and since mixing may have increased since those observed trips occurred, double or even triple those percentages and estimate that 4% of surfclam harvests actually are quahogs, and 3% of quahog harvests actually are surfclams. The actual "counting" of the catch of each species then can include those calculations.

2. Establish estimates based upon empirical sampling at sea. This can be accomplished without the proposed burdensome procedure of sorting the entire catch. Instead, it could be required that the harvesting vessel stop the belt at reasonable intervals (perhaps once every four hours), take a picture, and count the respective surfs and quahogs that are present, yielding the respective percentages of the non-target clam species on the belt. With repetition, this will produce a reasonable estimate of the percentage of the non-target species, whether surfs or quahogs, being harvested on any given trip.

Other bases for reasonable estimates of bycatch, i.e., percentages of mixing, certainly come to mind but will not be addressed further here. The salient point is that the intrusive and undoubtedly crushingly expensive procedures for counting every clam, proposed in pending Alternatives 2 and 3 under the proposed amendment, are entirely unnecessary.

The draft amendment, and its supporting narrative, should not have gone out to public hearing. The purported explanations of proposed alternatives, particularly Alternatives 2 and 3, apparently have been cobbled together from FMAT discussions, but without any supporting factual evidence/information, and without any actual investigations of the practicality of those alternatives having occurred. The result is simply unsupported speculation about how Alternatives 2 and 3 might be implemented, but without any basis for predicting what the actual impact and cost of either alternative might be. We are left to "fill in the blanks" in the analysis offered in the hearing document.

Despite this plain deficiency in the prematurely released hearing document, we can attempt

at least the following conclusions about each Alternative as proposed:

Alternative 1

Maintenance of the status quo is not acceptable, unless a moratorium on enforcement of the status quo is put into place. The status quo allows "zero tolerance" for the presence of one or more quahogs in a surfclam cage, or the presence of one or more surfclams in a quahog cage. Given the widespread abundance of both species now reposing together, it is not humanly possible to ensure that a quahog will not end up in a surfclam cage, or a surfclam in a quahog cage. And this is so even if either of the "species separation" procedures described in Alternatives 2 or 3 is put into place.

Given the clearly inconsequential magnitude of quahogs in surf cages, or surfs in quahog cages – as described above – there is no biological or environmental rationale for imposing punitive penalties for the mixing of species in a cage. And if it really is deemed necessary to account for such mixed harvests, there are entirely reasonable procedures available for estimating the abundance of non-target species harvested, as also described above.

Suspension of the status quo sanctions on mixed species in clam cages ***will not*** lead to increased harvesting of mixed cages of clams. This is primarily because no processor wants to receive, and all vigorously resist, the delivery of mixed harvests to their plants. Two processors deal only in surfclams; plainly, quahogs delivered to them in mixed cages are a nuisance and a waste. Similarly, another processor deals only in quahogs, and the delivery of mixed in surfs causes only operational headaches.

Even the processors who process both species do not want to receive mixed landings. It is expensive to pay surfclam shellstock prices for a cage that is comprised in part of much less valuable quahog shellstock. The two species cannot be processed together, and the waste of time separating out the unwanted species from any particular delivery imposes a cost for which there is no benefit.

Harvesters are well aware that mixed landings are undesirable for all processors, and do their best – sanctions or not – to avoid the most highly concentrated beds of mixed clam species. If this harvester behavior were to change, with the suspension of mixed landing prohibitions, processors would impose their own sanctions, just as they have done in the past when excessive percentages of undersized clams, or rocks instead of clams, were delivered to the plants. Specifically, the processor will "cut" market price payment for the load, knowing that too much of the load is waste. This process effectively disincentivized harvesters from targeting small clams (or rocks) and the same would be true, even if there were no government sanctions for the harvesting of mixed species.

In short, again, the magnitude of the "mixed species" landings is inconsequential and does not endanger the resource. And to the extent mixed landings were to increase following a suspension of sanctions, that would be controlled by the market – a far more effective and ever present guardrail. The market, more efficiently than regulation, will prohibit/ disincentivize mixed landings, even if sanctions are shut down.

Alternative 2

Alternative 2 proposes a procedure for the separation of mixed species harvests which would not work in the real world. Further, this alternative has not been investigated in any fashion in terms of its actual expense and cumbersome impact on fishing operations, and therefore is not possible to evaluate.

Under Alternative 2 "onboard sorting will be required to ensure tagged cages contain [only] the clam species on the tag." Staff has explained that this procedure will impose "zero tolerance" for the presence of even one non-target species clam in a cage tagged for the target species. This is wholly unrealistic; no matter how diligently efforts are made to separate out ***all*** of the non-target species, some will inevitably sneak through – exposing the harvester to fines and penalties.

We know this because efforts at onboard sorting are occurring now, precisely because harvesters do not want and processors do not want to accept mixed cages including the non-target species, for the reasons explained above.

More critical, however, is that Alternative 2 simply assumes – with no investigation or data to support the assumptions – that in order to effectuate 100% onboard sorting "onboard operations may need to slow down ... to allow better sorting of the clam species prior to placement in cages." This pronouncement is certainly true, but begs the question of "slow down" how much and for how long? There may be 100 cages (or more) of clams on a harvesting vessel, with 32 bushels to the cage (i.e., 3,200 bushels). The time required to hand sort the entirety of that catch – on pain of a permit sanction if a non-target clam is missed – certainly would mean that "onboard operations may need to slow down" and indeed may need to slow down so much that the cost of compliance would exceed the value of the trip. Exactly what that cost would be is entirely speculative, and speculation should not be the basis for acceptance of an amendment to the SCOQ FMP.

Indeed, the Alternative 2 narrative concedes that a requirement to hand sort 100% of the catch, with zero tolerance, "may result in increased operating costs for some trips." Surely, this is correct, but the Council before adopting an alternative that admittedly would result in such increased costs should know with some certainty what those costs might be, and whether those costs would make harvesting financially unfeasible for survival.

Alternative 2 should not have been put out for public hearing until further investigation would allow it to be considered in terms of its financial impact on the harvesters and all of the industry, and until this financial impact could be reasonably ascertained without complete reliance upon nothing but speculation.

Alternative 3

Like Alternative 2, Alternative 3 is premised entirely upon unsupported speculation about its financial impact and operational practicality. Alternative 3 therefore should be removed from

consideration by the Council, at least until necessary investigation cures its speculative assumptions.

Alternative 3 proposes to allow mixed landings but only with a "port sampling program" to be administered at the dock. The draft admits this "would be a costly endeavor." And indeed it would, as it would require the interception of an arriving vessel (at all hours) and the "dumping and refilling of all or some of the cages." The "dumping" would be for the purpose of an accurate count of each species landed, for ITQ tracking.

Dumping and refilling "all or some of the cages" at the dock is a wholly unrealistic and impractical proposal. There may be 100 or more cages (3,200 bushels) on any given trip. Who is to do the "dumping" at the dock, and how? Where are the clams to be dumped? How are health standards to be observed while "dumped" clams sit on a dock likely for hours while meticulously "counted" by a field agent?

Who pays for the dock space for the "dumping" and counting? How will the clams then be reloaded into cages, which is necessary for transport into the processing facility? Who does the reloading and how will it be paid for?

The hearing draft purports to respond to these financial inquiries by stating that "this type of program" may cost "more than $200,000.00 annually." Where does this figure come from and how is it supported? Is it just a guess? How do we know that the actual figure will not be $2,000,000.00? There is nothing in the record to justify this "$200,000.00" cost estimate for this wholly impractical program, a cost that will be borne of course by industry in some fashion.

Alternative 3 should not be considered in its present form by the Council, with utterly no basis for establishing its costs/expense and its operational feasibility.

Alternative 4

Alternative 4 is premised upon development of new technology, apparently already in start up, that would electronically monitor mixed catches as they come aboard. This could be a positive solution, although we have no information on the economic impact of actually installing the technology on a vessel and keeping it operational as a trip progresses. That aside, the primary obstacle here is that it will still take several years for this technology to be operational, according to the hearing draft.

From our perspective it would be fine to continue to pursue this alternative – provided, importantly, that there is enforcement relief for mixed landings while development of this new technology is underway. Otherwise, the industry will continue to be subject to potentially punishing fines and/or permit sanctions for the next several years.

We have already explained above that there would be no effect on the resource or on the harvesting of the quota if the current sanctions for mixed landings were placed in moratorium. So

if the Council would be willing to recommend that penalties/permit sanctions be deferred while this proposed new technology is developed, there really is no reason why industry should be opposed to this Alternative 4. But this moratorium caveat is critical and Alternative 4 should not be adopted unless such a moratorium on enforcement of the prohibition on mixed landings is put into place.

We thank you in advance for consideration of these comments and concerns as this regulatory review moves forward.

Very truly yours,

SEA WATCH INTERNATIONAL, LTD.

By: _____
Thomas T. Alspach, General Counsel

TTA/tsd
cc: Michael Pentony, Regional Administrator
Michael Luisi, Chair, MAFMC
Peter Hughes, Chair, MAFMC Surf Clam Committee
Jessica Coakley, MAFMC

Coakley, Jessica

Subject: FW: Mixed Clam Comments

From: David H. Wallace
Sent: Monday, November 28, 2022 2:34 PM
To: Coakley, Jessica <jcoakley@mafmc.org>; Montanez, Jose <jmontanez@mafmc.org>
Subject: Mixed Clam Comments

Surfclam and Ocean Quahogs Mixed Species Amendment Comments

November 26 2022

Mid Atlantic Fishery Management Council
Dover Delaware

Re, Comments on Mixed Clam Amendment

It is suggested that this amendment be sent back to the clam committee, the clam advisors and NMFS to find a workable solution that protects the clam stocks, and allows industry the ability to stay in business by having an allowance of the non targeted species on the vessel and in mixed cages. The world has changes in the last 32 years and the SCOQ FMP must also change.

Short History,

When the SCOQ FMP went into effect in 1977 the mixing of surfclams and ocean quahog had never been seen and they were separated by surfclams found from the beach to about 100 feet and ocean quahogs in the Mid Atlantic were found starting at 120 feet. Since in most areas the difference between 100 and 120 feet is divided by miles where there was little to no overlap of the two species. Because of the separation there was no known problem of catch ocean quahogs on a surfclam trip and no chance of catching surfclam on an ocean quahog trip.

When amendment 8 was implemented and surfclam and ocean quahogs tags were, and still are different colors for enforcement reasons. This rule was included to prevent vessel operators from catch surfclams, and placing ocean quahogs tags on the surfclam cages. Quahog quotas were higher than demand so those tags were plentiful . The enforcement officers consider placing the wrong tags on the other species a very real possible problem. Therefore, they required a rule that allowed only clams of the same species on a declared surfclam or ocean quahog trip. The rules not to allow even one clam of the other species on a vessel's selected trip was designed to stop possible cheating by landing surfclams with quahog tags. At the time no one in the clam industry or the council objected to the rule because it most vessel and processors were in favor of good enforcement.

Industry understood the rule and no one was opposed. About 20 years ago the industry noticed that the near shore of surfclams started disappearing. There were a few industry members who though there was wide spread cheating, but if that were the case the surfclam shucking plants would be working much harder than than they were. No one wanted to admit that the clams were dying in New Jersey and New York inshore surfclam stocks.

The vessel operators were also noticing that the normal federal surfclam grounds were not productive as they had been in the past. A few years later the ocean quahog vessels started seeing small surfclams on their quahog grounds. At first that was not much of a problem because they were being separated from the quahogs with the deck gear that was used to take out the trash. However, a few years later the surfclams has grown to the size of quahogs and therefore were not being graded out.

About 6 years ago, the industry addressed the problem to the council. The NMFS already knew of the problem and were not doing anything about it. The industry's requested an amendment to fix the mixed clam situation. NMFS rejected the mix clam amendment because there were some in the government that thought some clam industry members may have excessive shares and that had to be addressed before any other clam amendment could move forward.

Therefore, the excessive share amendment when forward and the mix clams was not taken up by the MAFMC. However, at some point NMFS suggested that the mixed clam problem could be resolved with and administrative amendment which it appears to be this proposed amendment.

As time went on, the ocean in the Mid Atlantic bight got warmer, the more surfclam were setting on the quahog grounds and at that point the deck sorting gear was unable separate the surfclams from the quahogs. Later, the surfclam far out numbered the quahog population, and the fisheries switch. Now the clam crews cannot pick out the quahogs from the directed surfclam fishery. The warming of the ocean has created this situation and the SCOQ FMP never conserved such a thing would happen. The current FMP is not designed to deal with this problem.

It is assumed that the current proposed amendment is the NMFS document because the clam committee and the advisors were not involved and only allowed to see the proposal amendment a few weeks ago.

In the past, the council staff, the SCOQ committee and the clam advisor worked out how amendments are developed so the fisheries are managed in such a way that the industry can comply with no problems. That was the case in the excessive share amendment. The industry worked out a solution and the council, the SCOQ committee, NMFS agreed and the amendment moved forward.

This amendment was not done in the same way, the industry was not involved. The proposed amendment was developed by the FMAT that for the most part have never seen a modern clam boat and have not been on a 48-hour clam trip in the winter. It is easy to justify a proposal if the group has little what it takes to operate a clam boat in in the past the people who operate these vessels are consulted. But in this situation the industry was not involved, the alternatives either do not address the problems or are so premature or unclear as to not be possible. That is what the SCOQ AP and the clam committee are to do from the beginning, not at the last minute

The proposed amendment with four alternatives is unworkable and if 1 through 3 are one that is implemented and enforced, most to the Mid Atlantic bight vessels will go out of business. The simple fact is that there is no way that any cage on the ship that as even one of the other species in a cage is a violation. This means that the entire load is in violation. Zero tolerance in unacceptable and not doable. The industry was not asked if this is possible, it is not and therefore, most of the industry strongly oppose alternatives 1 - 3. As for alternative 4, it would all depend on a number of unknowns and could not have a zero tolerance requirement. A ocean quahog vessel can have as many as 400 thousand quahogs on a single trip, and a zero tolerance for surfclam is unreasonable

Conclusion

As pointed out, the non mixing of surfclams and ocean quahogs was implemented decades ago for good reason at the time. However, the world has changed though no fault of the industry, the council or the NMFS. But the concept of no mixing of the species is being reaffirmed without consideration of reality and with no input from the council or the industry. The problem is in the details, and the obvious problem has been over looked, because it is a difficult problem for the agency. The fact is that implementing alternatives 2 and 3 as written will lead to an increase cost that the vessel owners must demand from the processors which is behind their ability to increase their selling price. The processors do not want mixed clam in the cages that they buy. But zero tolerance is not the solution. There must be a tolerance in the regulation, which the NMFS obviously does not like. The observers report on bycatch for surfclams and ocean quahogs which is in the amendment says that the mixing is low and just a few percent.

In all of the plants, the non targeted species is removed because the customer will not tolerate the other species in their product because the two clams are much different in taste, color and texture. NMFS folks are concerned with reporting of the catch, on a surfclams trip, for the most part, is over reported the catch by a few percent and the same goes for some ocean quahog trips. But the percentages are very small and can be accounted for and will have no effect on either species quota or biomass, since both species are fished below 50 percent of the TAC.

Therefore, it is suggested that this amendment be sent back to the clam committee, the advisors and NMFS to find a workable solution that protects the clam stocks, and allows the clam industry ability to stay in business by having non targeted species on the vessel and in mixed cages.

Thank you for considering my comments.

David H. Wallace

A surfclam and ocean quahog advisor .

Sea Watch International, Ltd.

8978 Glebe Park Drive ◆ Easton, MD 21601

410-819-8502 ◆ 800-732-2526
Fax: 410-822-1266

November 29, 2022

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) Species Separation Requirements Amendment.

Even if the proposed amendment contained an ideal amendment with unanimous support of all stakeholders, legal counsel to Sea Watch has indicated Amendment alone may not fully address the overall regulatory issue of mixed landings[i]. We have located two separate references that each contain multiple citations toward a prohibition of mixed landings:

- 50 CFR Part 652, provided in Federal Register / Vol. 58, No. 50 / Wednesday, March 17, 1993 / Rules and Regulations p. 14340 contains the following language:
  - *"(3) make it illegal to fish for, retain, or land surf clams and ocean quahogs on the same trip;*
  - *(4) make it illegal to fish for, retain, or land surfclams on a trip designated by a vessel operator as being an ocean quahog fishing trip or ocean quahogs on a designated surf clam fishing trip;"*
  - *"Existing § 652.9(a) allows the Regional Director, by publication of a notice in the Federal Register, to specify notification requirements that vessel owners or operators would have to comply with prior to departure from port or return from a fishing trip for surf clams or ocean quahogs."*

- The following language is present in three instances in Amendment 8 to the Fishery Management Plan for Atlantic Surfclam and Ocean Quahog Fishery"
  - *"Surf clam tags may not be used on cages containing ocean quahogs and ocean quahog tags may not be used on cages containing surf clams."*
    - 2.3.2.3.2. Issuance of allocation permits, p. 5;
    - 9.1.2.4.2. Issuance of allocation permits, page 55;
    - 2.2.2. Issuance of allocation permits, p. App 5 39:

While the proposed amendment addresses those portions of Amendment 8, the question remains as to whether any accepted amendment to the SCOQ FMP alone would supersede the language contained within 50 CFR Part 652.

A stronger distinction is needed between two key terms that underpin both the title of the proposed amendment and the proposed alternatives. The two terms "identification" and "separation" seem to have been conflated in the generation of the proposed amendment, but in practice have very different functions. Identification is the core function required to account for and properly debit each species from the respective quota for that species in the mixed landings scenario that we currently encounter in varying degrees across the geographic range of our fishery. Because of how processors like Sea Watch market each species, separation is an issue that the industry will be forced to tackle, regardless of how this proposed amendment moves forward toward resolution. The mixing of clams in fishable areas is a dynamic driven by global warming[ii]. Therefore, we need the flexibility to separate as our respective businesses see fit. While identification may be a technical precursor to future separation technologies, we certainly do not believe that separation is a precursor to identification.

The proposed amendments as written do not provide a viable path forward for the industry to cost-effectively address the mixed landings issue, nor do any of the proposed amendments result in a marginal sustainability gain.

Sea Watch does not view mixed landings as an overall threat to the sustainability of the fishery under past, current, or conditions for the foreseeable future. Quota utilization is far below Total Allowable Catch for both SC and OQ. Secondly, boats generally avoid areas of high degree of mixing to both mitigate risks from enforcement and to minimize operational costs of sorting. Therefore, the degree of mixing on the boat is actively minimized.

We believe a Management Strategy Evaluation (MSE) that models different mixed landings percentages along with different levels of quota utilization can help quantify the risks to the fishery associated with our current characteristics of effort. We believe that a combination of high degree of mixing and high quota utilization would be needed before sustainability problems could emerge, but we prefer to allow science to set the upper limit guiderails for sustainability. We believe the Northeast Fishery Science Center is the entity best equipped to conduct this MSE.

Our assumptions that low mixing and low quota utilization do not pose a risk to the fishery are rooted in the bycatch reports for each fishery. Note that out fishery is among the lowest in bycatch metrics[iii], where the highest bycatch for SC is OQ trips, and is OQ for SC targeted trips. The highest degree of bycatch is OQ caught in SC targeted trips in the mid-Atlantic. While there is a degree of under-reporting of OQ catch, this is done at a concomitant volume-to-volume degree of over-reporting of SC landings. During my opportunity to share public comments at the Council October 2022 meeting, I provided a sketch of relative bycatch figures for this scenario. Below are data that provide a more thorough understanding of the magnitude of the most prominent bycatch scenario:

- National Bycatch Report Update 3, 2019[iv] indicates that the OQ bycatch among SC directed trips in the Mid-Atlantic is 2.59% of the SC harvest, by weight.

- As supported in page 17 of the public comment document[v], the quota utilization percentage of OQ somewhere in the low 40s over the last three years, with 2020 ending slightly lower.

- Expressed as a percentage of OQ quota, the OQ bycatch amounts to an additional 1.65% of the OQ quota, not accounting for any bushel density differential. Therefore, this percentage PLUS OQ quota utilization over recent years still results in a historical low quota utilization. Based on 2021 landings, total ocean quota utilization would have been 44.0%.

We agree that we can improve how we quantify landings by employing best practices already employed across US fisheries, including the SCOQ fishery. VTR estimates are already employed on every clam fishing trip where captains provide an estimate of bycatch for the other species landed. The bycatch clam species could be listed separately from the other bycatch species. Our view is that this is an incremental improvement over the current under/over reporting tradeoff currently underway. We believe reliance on the VTR would eliminate the need for a mixed landings declared trip, which is part of proposed Alternatives 2, 3, and 4.

Until we can quantify the implementation costs and risks of amendment implementation given the current fishing behavior, we ask for a suspension of enforcement action associated with mixed landings. As mentioned before, even with suspension enforcement, fishing vessels would still seek to minimize the degree of mixed landings due to market requirements that the two species are shucked and processed separately.

With the combination of enforcement suspension and VTR implementation, we have the time to develop a proper risk assessment based on science. We have proposed the MSE framework and by whom this should be conducted. SCEMFIS has a completed[vi] and has an ongoing[vii] project that is allowing us to begin to understand the scope of the mixed clam grounds. SCEMFIS industry members recently funded a new proposal to develop GIS layers to better visualize the degree of mixing in the fishery over time-series from existing datasets.

With enforcement suspension and VTR implementation, we will have the time to investigate and understand the costs of implementation of both identification and separation. The public comment document does not provide cost estimates that are at this point specific and reliable enough to be used as a basis to understand costs of Electronic Monitoring (EM) implementation. This is assumed to be an outcome of the Coakley and Hennen proposal on EM that was funded by NOAA. Through SCEMFIS, we are working with experts in agricultural engineering to bring forth a proposal to understand the costs and capabilities of sorting technologies that work for the various needs across the industry.

Our view of a viable alternative removes any mandate on sorting or separation. This will give the industry flexibility to implement separation either on-vessels or at the processing plant, depending on which technique best suits each individual business enterprise.

A summary of points in these comments for consideration are as follows:

- Suspend enforcement of the zero-tolerance for mixed landings.
  - Incentives to minimize mixed landings will remain to minimize costs to separate clams and maximize processing efficiency.
- Implement non-target clam reporting on VTRs.
  - This recommendation is consistent with both National Standard 6 (Variations and Contingencies) and 9 (Bycatch).
- Abandon the concept of the proposed mixed landings trip declaration.
- To be assured risks tolerances are based on the best available scientific information consistent with National Standard 2 (Scientific Information):
  - Commission the NEFMC to conduct and MSE aimed at understanding risks that mixed landings pose to sustainability of the fishery.
  - The industry has and will continue to support research on comingled landings through SCEMFIS.
  - The NOAA-funded (EM) project will proceed and provide greater understanding of the technical challenges of identification.
  - The industry will consider the implementation of separation technology studies that suit our various operational needs.
- Provide greater detail on implementation costs of identification technology, as well as a range of scenarios where identification measures are required for the ongoing sustainability of the fishery.

Below is a summary of our opinion on each alternative:

- Alternative 1 is not viable because the status quo cannot continue. We need to address the issue in some way. Sea Watch opposes Alternative 1.

- Alternatives 2 and 3 are not workable as they assume separation as a precedent to the issue of identification. Furthermore, the mandated degree of separation precision goes beyond what is needed for continued sustainable management in the fishery. Implementation costs of sorting associated with each alternative are inadequately characterized. No stakeholders in this process have a full understanding of costs, nor is it known over what timeframe these sorting measures can be implemented. Alternative 2 or 3 as will lead to more problems than we currently have. Sea Watch opposes Alternatives 2 and 3.

- We believe that the long-term solution to address the core issue of identification of catch indicates the need for a new alternative modeled after Alternative 4. The proposal submitted by Coakley and Hennen for funding on EM will require a few years to complete. Implementation of an Alternative 4-type of alternative would only need to be considered when risks to sustainability to the fishery grow beyond an acceptable level. For example, EM technologies could only be required when mixing percentages and/or quota utilization rates reach certain levels that are informed by a well-designed MSE. One note on Alternative 4 is that it is not clear how cost-

recovery is relevant if costs are already incurred through EM implementation. The total costs need to be understood as well the mechanism by which costs would be implemented. An Alternative 4-type of solution seems workable with suggested preconditions and changes detailed above in the summary comment points.

Thank you for the opportunity to comment on the proposed Atlantic Surfclam and Ocean Quahog Species Separation Requirements Amendment.

Sincerely:

Joseph J. Myers
Sr. Director, Innovation and Sustainability

These comments were submitted by e-mail.

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[i] T. Alspach, Personal communication.
[ii] E. Powell, personal communication, and reference in Footnote vi.
[iii] NOAA Fisheries. 2022. National Bycatch Report https://www.fisheries.noaa.gov/resource/document/national-bycatch-report. Published 14 February 2018. National Bycatch Report Update 3, 2019. https://media.fisheries.noaa.gov/dam-migration/nbr_update_3.pdf. p.13.
[iv] NOAA Fisheries. 2022. National Bycatch Report https://www.fisheries.noaa.gov/resource/document/national-bycatch-report. Published 14 February 2018. Update 3 Tables, Greater Atlantic Region, Table 3.4.2a https://media.fisheries.noaa.gov/dam-migration/table_342a.pdf. Updated 8 Jun 2022.
[v] Mid-Atlantic Fishery Management Council, National Marine Fisheries Service. 2022. Species Separation Requirements Amendment. Amendment XX to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (NMFS). https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/633df2ef89cdc26dfcb7b390/1665004417479/SCOQ_SpeciesSeaprationRqmt_PHD.pdf. published October 2022.
[vi] SCEMFIS. 2022. How climate change is pushing surfclams and ocean quahogs into conflict. https://www.youtube.com/watch?v=ZPlD2Uiig7g.
[vii] Stromp, S. 2022. Evaluation of the degree of co-occurrence of surfclams and ocean quahogs at fishable concentrations. SCEMFIS Fall 2022 Meeting. https://www.youtube.com/watch?v=0efDrcg6h2s.

Chris Moore, Ph.D., Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 19901

RE: SCOQ Species Separation

Dear Dr. Moore,

I appreciate the opportunity to comment on the Draft Species Separation Requirements Amendment, Amendment XX to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan (Amendment). While recognizing that the degree of co-mingling of the two clam species varies by location, Company, and by individual harvesting vessel when targeting either surfclams or ocean quahogs, and is likely to increase in the future, I cannot support any of the four alternatives presented in the Draft Amendment because they offer solutions that are either impracticable or are presently poorly described with no clearly defined socio-economic impacts to the clam industry.

LFF is a vertically integrated seafood company that harvests and processes surfclams in NJ, employing over 200 personnel. The company is well respected in the seafood industry and surfclams are certified by the Marine Stewardship Council, a globally recognized assessment body that evaluates sustainability, excellent management, and is a fishery that has minimal negative impacts on any other species or habitats.

Clam vessels operating bottom-tending hydraulic dredges declare, at the start of their trips, whether they are targeting surfclams or ocean quahogs and will tag the cages of either species with the tag identified for one species or the other. These vessels catching surfclams and ocean quahogs (hereafter referred to as the clam industry) sometime encounter both species of clams on a single trip to varying degrees in what is referred to as co-mingling of the two clam species. This co-mingling will vary by depth, distance from shore, latitude, or some other benthic characteristic where both species are developing. Co-mingling has been increasing within recent years as bottom ocean waters have been warming due to climate change and the less tolerant of increasing temperatures, the surfclam species, is moving in a Northerly and/or Easterly direction in the Exclusive Economic Zone (EEZ) where bottom temperatures are more favorable for settlement and growth. Under the current management regime for the clam industry where vessels must declare for one species and land only that one species, it becomes necessary to develop best management practices to minimize or eliminate by-catch and, at the same time, not waste a resource that is biologically healthy. In fact, both clam species are very robust, as

LaMonica Fine Foods
PO Box 309
48 Gorton Road
Millville, NJ 08332

demonstrated in their most recent benchmark assessments and are fished well below any fishery management target reference point value. The Annual Catch Limits (ACL) for both species are well below target biomass levels and, in fact, the clam industry landings for both species have been below their ACL values that have not changed in at least the last 10 years. Landings and by-catch of either species present no threat to the health of both species.

While the Draft Species Separation Requirements Amendment (Amendment) offers four alternative actions developed by the Fishery Management Action Team (FMAT) comprised of scientists from both Federal agencies within the National Marine Fisheries Service (NMFS) and Mid-Atlantic Fishery Management Council (MAFMC) staff, the document and alternatives would have benefitted tremendously with the input of the clam industry, particularly members of the MAFMC Advisory Panel for Surfclams and Ocean Quahogs.

The clam industry recognizes that Alternative 1, No action/status quo, is unacceptable since it was the clam industry that approached the MAFMC with a growing problem of co-mingling due to climate change that required changed management measures. The clam industry, through a project funded through the Science Center for Marine Fisheries (SCEMFIS) documented a wide band extending throughout the mid-Atlantic region where both species of clams were overlapping at varying degrees.

As LFF cannot support Alternative 1, neither can we support Alternative 2, Allow Combined Trip Declaration and Require Onboard Sorting. While the allowance for a combined trip declaration would allow for both species of clams on a single trip to be landed and reduce any by-catch discards, the sorting of the entire catch aboard the clamming vessel in impracticable in many, or possibly the majority of cases, where the two clam species come aboard at the same time and during the same trip. The sheer volume or numbers of clams in the catch, coming aboard the clam vessel and moving through a rapid conveyer system to placement in cages cannot possibly be sorted 100% by existing crew aboard the vessel. Couple this challenge with the added potential for rough seas and the onboard sorting of clam species by existing crew is impossible. Placing additional crew members aboard a clam vessel and slowing down the conveyer system putting the clams in their respective cages could very well make for a trip that is not only impractical but also not financially feasible.

LFF also cannot support Alternative 3, Allow Combined Trip Declaration, Mixing of Clam Species within cages (on a Declared Combined Trip) and Require Manual Port Monitoring of Declared Combined Trips. Again, allowing for the landing of both species if encountered on a single trip would prevent wasteful discards if the by-catch is substantial and cannot be sorted at sea. However, combining both clam species within a single cage poses problems with species specific cage tags that monitor the catch and may present a Company that targets primarily one species or the other from maximizing their landings value. For example, LFF is referred to as the *Home of the Hand Shucked Clams* and targets and shucks surfclams exclusively. Landing ocean quahogs within a cage with surf clams is not desirable and less profitable for the vessel and the company. The details of the shoreside monitoring of mixed cages is not well defined, in fact, it is poorly defined, and the cost associated with such a new shoreside monitoring of mixed cage clams may be prohibitive to the point that the clam industry not only loses out on its

targeted species but must now bear the non-estimated costs that will come back for the clam industry to pay under the terms of the Cost Recovery Program Amendment for the fisheries.

Alternative 4, Allow Combined Trip Declaration of Clam Species within Cages (on a Declared Combined Trip, and Require Electronic Monitoring of Declared Combined Trips) shows some long-term possibilities with the implementation of a new onboard electronic monitoring (EM) program to assess catch composition but no such EM system exists for the co-mingling of surfclams and ocean quahogs problem. How long will it take to research and develop such an EM monitoring system and how much will it ultimately cost the clam industry? Without any answers to these two very important questions, LFF cannot support Alternative 4. The Amendment identifies Alternative 4 as a long-term solution but what does the clam industry do about co-mingling in the meantime while this new technology is being developed?

Ultimately, the clam industry, not the FMAT, needs to come up with a short-term solution to the co-mingling problem created by climate change that is practicable and affordable. **One thing the clam industry strongly supports at this time, either within an Amendment or some other, more efficient administrative process under NMFS, is the immediate suspension of legal liability that prohibits the landing of even one clam, either surfclam or ocean quahog, from being present in a cage with a tag for the other species.** By removing this legal jeopardy on clam vessels now, the industry can devote sufficient time to come up with a practicable solution to the co-mingling problem. Due to the fact that first, co-mingling is a natural occurrence of clams in the wild, second, there is no damage to the biomass and thirdly there is no benefit to the industry or enforcement to monitor and issue citations for co-mingling, it is in the best interests of all stakeholders to find a solution to this issue.
In summation, since the clam industry, from the LFF point of view, cannot support any of the four Alternatives in the Draft Amendment, it would be advisable for the MAFMC to postpone any action of this Draft Amendment when it meets in December 2022 but allow the clam industry to better participate in developing Alternatives for the short-term and long-term solution to the co-mingling problem.

On behalf of LFF, I appreciate the opportunity to comment on the Draft Species Separation Requirements Amendment and look forward to working with the FMAT to present Alternatives for this Draft Amendment soon.

Sincerely,

Daniel P. LaVecchia

Daniel P. LaVecchia, President
LaMonica Fine Foods

From: Jeffrey Pike
To: Coakley, Jessica
Subject: SCOQ Species Separation
Date: Tuesday, November 29, 2022 4:14:14 PM

Jessica

Bumble Bee Seafoods has reviewed all the alternatives and supports option #3.
Sorting onboard vessels is impossible for many harvesters.
Thank you

Jeffrey R. Pike
Pike Associates, LLC
C-202.731.9148

Surfside Foods, LLC

Phone: (856) 785-2115 * Fax: (856) 785-0975

2838 High Street
PO Box 692
Port Norris, NJ
08349

The draft Atlantic Surfclam and Ocean Quahog (SCOQ) Species Separation Requirements Amendment (Amendment) alternatives, to modify the species separation requirements in the Atlantic surfclam and ocean quahog fisheries, do not adequately recognize the biological, economic, social, and physical interactions among the components of the relevant ecosystems. Regulatory changes are needed because it has been, and will continue to be, impossible to ensure that 100 percent of the catch on a targeted trip is the targeted clam species in every cage. This was well communicated by industry prior to the development of the proposed alternatives but has not adequately been addressed within the Alternatives.

A management strategy evaluation (MSE) has not been performed to determine the impacts resulting from different levels of non-targeted species in landings. A MSE for the proposed amendment should explicitly evaluate a range of management strategies in response to the mixing of Atlantic surfclam and ocean quahog species being caused by climate change. Until this is done, proposing alternatives for a FMP Amendment is pre-mature. An analysis is necessary to determine the flexibility management has around a reasonably precise estimate of the proportion of mixing in catches to determine the point where the degradation of the precision of landings reports may impact the stock assessment. Various incremental landings of the non-targeted incidentally caught species must be analyzed so that an allowance can be determined that doesn't increase uncertainty to unacceptable levels. The assessment model would be run by the NEFSC to determine the influence of increased uncertainty in the landings data, both for the surfclam model and the ocean quahog model. It is quite possible that some increases in uncertainty will not materially impact the assessment for these two species. Performing this analysis may be as simple as increasing the coefficient of variation (CV) on the landings, yet an analysis hasn't been requested of the NEFSC.

Here I will provide my comments on each of the specific alternatives presented in the proposed Species Separation Requirements Amendment as well as on the new combined trip declaration category:

Combined Trip Declaration (Alternatives 1,2, & 3) – I think of this as the "Know Before You Go" piece of the Amendment. Trip declarations are made before the vessel departs the dock (or crosses the demarcation line, 3nm offshore in most areas). For many, if not most trips it would be impossible to know if there will be incidental catch of the other clam species before making a declaration. A large percentage of the time spent harvesting clams is spent looking, making tows in which the composition of the catch is unknown until it is harvested. Industry has performed two analyses of a surfclam vessels' trip area. In one analysis of LaMonica Fine Food's vessels within the Atlantic Shores wind lease area found the median trip area of 10.0 sq. nm for a clam vessel harvesting surfclams. Another analysis of all surfclam industry vessels working within the Ocean Wind I lease area found the median trip area of 8.41 sq nm. These analyses were done using vessel VMS data collected over an eleven-year period.[1] Harvesting over such a large area will inevitably cross areas containing different levels of species mixing.

A change in the tide, the direction of the wind, or a change in the barometric pressure will often change the composition of the catch for any given location and as often as not, results in the vessel moving or changing its tow up. Even vessels targeting areas that are thought to be 100 percent single species may have small amounts of the non-targeted species, making these vessels out of compliance if a single non-targeted clam finds its way into the catch. The proposed amendment hasn't considered what happens if a vessel declares a Combined Trip but catches only one species or declares a single species trip but ultimately catches and wishes to retain incidental catch of the other species.

Alternative 1 is not a desirable management alternative because vessels will have to operate in violation of the regulations to achieve optimum yield. An increasing number of surfclam sets will be on grounds still occupied by ocean quahogs because (1) ocean quahogs can bury to avoid warmer waters when necessary, and (2) because the ocean quahogs are such long lived creatures, they will continue to occupy the new areas where surfclams are setting for many years to come.

[1] Last Tow, LLC Fishing Route Analytics Reports Prepared by Azavea, 990 Spring Garden Street, 5 th Floor Philadelphia, PA 19123 (215) 925-2600 http://www.azavea.com

Alternative 2 is not a desirable management alternative because 100 percent onboard sorting would be required, which is impossible. Although vessels would be able to land both species on a trip, they would always be in violation of regulations requiring 100 percent of each cage is a single species.

Alternative 2 was presented as feasible if trips with mixed catch were “slightly” slowed to allow time for onboard sorting. This statement is simply not based on facts. If there is species mixing within the catch, cages aboard the vessel will likely contain some amount of the non-targeted species – period, it is unavoidable. It is not possible to sort 100 percent and still run an economically feasible business. This is the reason that the SC/OQ Advisory Panel and industry members all communicated that an allowance for the non-targeted species was necessary. This alternative does not provide that allowance.

Alternative 3 is not a desirable management alternative because this regulatory framework would unnecessarily increase government and industry costs associated with administering the regulatory requirements and result in an estimate of each species that would likely be much less accurate than a measurement that could easily be made by the crew aboard the vessel during the trip. A NOAA Fisheries sampling program to assess catch composition after clams are offloaded and before they are processed is not necessary nor is it practicable. This Alternative’s measures would increase the regulation burden, impact the way the fishery operates such that offloading and transportation is disrupted, and will negatively impact fishing operations and practices.

For a port sampling program to produce a sufficiently accurate assessment of the catch composition a sufficient sampling of the cages aboard the vessels will be necessary. Because the port sampling agent will not know if the clams were caught over a limited area or a vast area, or the variability of the load, a relatively high number of samples will be necessary for accuracy. Clams will have to be removed from multiple cages (cages weigh several thousand pounds when full) and separated to measure the volume of each species. Then the clams will have to be put back into cages.

Compare this process to one that a vessel operator would have to undertake to accurately report the volume of each species, of a mixed species catch. The vessel operator would need to sample only as necessary to determine catch composition. If the vessel was harvesting the same area during the entire trip and conditions remained such that catch composition didn’t change, limited sampling would be

enough for accurate reporting of the number of cages for each species. If the vessel worked several areas to get the trip or conditions changed such that catch composition changed, the vessel operator would know when new sampling would be necessary, and how to apportion all sampling results to the species being reported, to accurately report catch. Where port sampling would require that clams were removed from cages for sampling, the vessel operator would be sampling catch composition before the clam were put in cages. In summary, accurately report the volume of each species, of a mixed species catch would be very difficult, time consuming and expensive if done by port sampling while accurately report the volume of each species, of a mixed species catch would be easy and straightforward if done by the vessel operator during the trip.

Vessel Trip Reports (VTRs) can provide the quality data necessary to inform fishery science and management. Vessel owners or operators of vessels issued a surfclam or ocean quahog permit, are currently required to maintain and submit, an accurate fishing log report for each fishing trip. VTR reporting of quantities of surfclams, or ocean quahogs incidentally caught and retained would provide the quality data necessary to inform fishery science and management for mixed catches.

Alternative 4 - The feasibility of the implementation of a new onboard electronic monitoring (EM) program to assess catch composition has yet to be determined. This alternative should not be considered until such feasibility is known. Knowing the many hurdles that would need to be addressed for this to be successful, it is likely that an EM alternative turns out to be no more accurate than the owner or operator reporting the number of cages of the non-target species using VTRs. EM, in my opinion, will take much longer to perfect and be much more costly than anticipated.

Because Alternative 4 would not allow the mixing of both clam species within the cages or onboard the vessel until the implementation of a new onboard electronic monitoring (EM) program to assess catch composition is put in place, we are potentially many years away from actual modifications to the regulations if choosing this alternative, therefor this alternative is not currently acceptable.

SUMMARY

Current regulations must be modified to allow landing both Atlantic surfclams and ocean quahogs on the same trip. Alternatives 1 and 2 are not appropriate because they do not permit some level of mixing of both clam species within the cages. In these high-volume fisheries that are overlapping due to climate change, it has become

impossible to ensure that 100 percent of the catch on a targeted trip is the targeted clam species in every cage. The areas of overlapping will likely grow larger while it will be these same areas needed to support the fishery. Even if a vessel chose to separate the different species into separate cages there would always remain some level of mixing. An evaluation is necessary to determine where incremental landings increase of the non-targeted incidentally caught species increase the uncertainty for biomass assessment levels of the targeted and non-targeted species to unacceptable levels.

The implementation of a new NOAA Fisheries sampling program to assess catch composition under Alternative 3 is not practical. Many cages would have to be dumped and sampled to get an accurate count of both species because cages with clams caught from different areas will have a different composition of species mixing; whereas an accurate accounting could be determined easily by the vessel operator during the normal course of the trip.

Alternative 4 isn't practical at this time and it may take many years for an electronic monitoring program would be robust enough to assess catch composition in the SC/OQ fisheries.

A management alternative is needed where - vessels declare the targeted fishery as they currently do; vessels can retain non-targeted surfclam or ocean quahog if all retained catch is reported on the VTR; and vessels have some allowance for non-targeted species within cages. We do not currently have an acceptable management alternative.

Thank you for considering our comments.

Regards,

Thomas Dameron

Thomas Dameron
Government Relations &
Fisheries Science Liaison
Surfside Foods, LLC

Background reports referenced in the previous comment letter are available online:

Last Tow, LLC Fishing Route Analytics Reports

Atlantic Surfclam and Ocean Quahog Species Separation Requirements Amendment

Opportunities to Comment

The Mid-Atlantic Fishery Management Council (Council) is requesting public comments on a draft amendment to modify the species separation requirements in the Atlantic surfclam and ocean quahog fisheries. This action is intended to address the increased occurrence of mixed catches in these fisheries. The draft amendment describes a range of management approaches ("alternatives") that would modify current regulations to allow for mixed catches onboard vessels. The Council plans to review public comments and select from the alternatives described in this document at its December 2022 Council meeting. If action is taken, the Council will recommend the selected alternatives to NOAA Fisheries for review and rulemaking.

Public Hearings

Comments may be submitted at any of the following public hearings:

1. **Thursday, November 10, 2022**. 6:30 p.m. – 9:30 p.m. Embassy Suites Philadelphia Airport. 9000 Bartram Avenue, Philadelphia, PA 19153. 215-365-4500.
2. **Monday, November 14, 2022**. 6:30 p.m. – 9:30 p.m. Hampton Inn. 53 Old Bedford Road, Westport, MA 02790. 508-675-8500.
3. **Thursday, November 17, 2022**. 6 p.m. – 9 p.m. Webinar. Connection details can be found at the Council's website calendar at https://www.mafmc.org/council-events.

Written Comments

Written comments may be submitted by any of the methods listed below. Comments must be received by **11:59 p.m. on Wednesday, November 23, 2022.**

- **Email** to: jcoakley@mafmc.org (use subject "SCOQ Species Separation")
- **Online** at: https://www.mafmc.org/comments/scoq-species-separation
- **Mail** to: Chris Moore, Ph.D., Executive Director, Mid-Atlantic Fishery Management Council, 800 North State Street, Suite 201, Dover, DE 19901. Mark the outside of the envelope " SCOQ Species Separation."

Tips for Providing Public Comment

We value your input. To be most effective, we request that your comment include specific details as to why you support or oppose a particular proposed approach.
Specifically, please address the following:

- Which proposed alternatives do you support, and which do you oppose?
- Why do you support or oppose them?
- Is there any additional information you think should be considered?

Questions? Contact Jessica Coakley at jcoakley@mafmc.org or 302-526-5252.

SPECIES SEPARATION REQUIREMENTS AMENDMENT

AMENDMENT XX TO THE ATLANTIC SURFCLAM AND OCEAN QUAHOG FISHERY MANAGEMENT PLAN

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

October 2022

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 Administration's (NOAA) National Marine Fisheries Service (NMFS). This document was developed in accordance with all applicable laws and statutes as described in section 8.0.

The purpose of this action is to modify the species separation requirements in the Atlantic surfclam and ocean quahog fisheries. This Amendment to the Fishery Management Plan (FMP) proposes modifications to the regulations to allow for mixed catches onboard vessels. This action to update fishery regulations is needed because of the increased occurrence of mixed catches in the surfclam and ocean quahog fisheries, an issue raised to the Council by the clam fishing industry. The mixing of catches in these fisheries has created issues with the reliability and quality of the catch data being collected. Therefore, these regulatory changes are needed to improve data collection and management of the Atlantic surfclam and ocean quahog Individual Transferrable Quota (ITQ) system. In addition, the ongoing or increasing frequency of mixed catches in these fisheries has the potential to impact onboard fisheries operations, creating logistical and economic challenges in the long-term that need to be addressed.

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 Box ES-1 below.

Box ES-1. Summary of the alternatives.

Alternatives	Brief Description of Alternatives
Alternative 1 (No Action/*Status Quo*)	No changes would be made to the current regulations for surfclam and ocean quahog.
Alternative 2 (Allow Combined Trip Declaration and Require Onboard Sorting)	Current requirements would be modified to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. Under any of the trip declaration categories (i.e., Surfclam only, Quahog only, or Combined Surfclam/Quahog Trip), onboard sorting will be required.
Alternative 3 (Allow Combined Trip Declaration, Mixing of Clam Species within Cages (on a Declared Combined Trip), and Require Manual Port Monitoring of Declared Combined Trips)	Current requirements would be modified to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. On a declared combined trip (i.e., a fishing trip that is allowed to land both surfclam and ocean quahog) the mixing of both clam species within the cages would be permitted with the implementation of a new NOAA Fisheries sampling program to assess catch composition.
Alternative 4 (Allow Combined Trip Declaration, Mixing of Clam Species within Cages (on a Declared Combined Trip, and Require Electronic Monitoring of Declared Combined Trips)	Current requirements would be modified to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. On a declared combined trip (i.e., a fishing trip that is allowed to land both surfclam and ocean quahog) the mixing of both clam species within the cages would be permitted with the implementation of a new onboard electronic monitoring (EM) program to assess catch composition.

1.2 Summary of Impacts

The following section presents a summary of the expected impacts by alternative and cumulatively for management alternatives being considered (Box ES-1). 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 the current condition of the valued ecosystem component (VEC) and are also compared to each other. The recent conditions of the VECs include the biological condition of the target stocks, 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 (Table 10).

Impacts to Surfclam and Ocean Quahog and Non-Target Species, Physical Habitat, and Protected Resources

Under alternative 1 (no action/*status quo*), no changes would be made to the current regulations for surfclam and ocean quahog. Alternatives 2-4 propose changes to aspects of on vessel operations - such as trip declaration, onboard sorting, and/or the monitoring of catch onboard or dockside. These alternatives are expected to have no impact on the overall prosecution of these fisheries, including landings levels, distribution of fishing effort, or fishing methods while the clam dredge gear is being deployed to catch surfclam and ocean quahog. 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. Because the overall prosecution of these fisheries would not be altered, 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 2-4 are not expected to adversely affect any protected species; therefore no impacts (direct or indirect) on ESA-listed and/or MMPA-protected resources are expected. Because there is no change in the level of impacts to habitat under any of these alternatives, we expect continued minor, adverse impacts (negative impacts) to habitat will continue to occur under these alternatives (2-4), as clam dredges would be expected to continue to interact with the bottom habitat as these fisheries are prosecuted.

Impacts to Human Communities/Socioeconomic Impacts

The actions considered under alternatives 2-4, propose changes to aspects of on vessel operations - such as trip declaration, onboard sorting, and/or the monitoring of catch on board or dockside. They would not result in changes to other aspects of the of these fisheries, including landings levels, distribution of fishing effort, or fishing methods while the dredge gear is being deployed to catch surfclam and ocean quahog.

Under alternative 1 (no action/*status quo*) there would be no changes to the current species separation requirements as established in the FMP and regulations. Taking no action to address this emerging issue has the potential to result in socioeconomic impacts that range from slight negative at present, to negative in the long-term because of the potential for increased fishing

operational costs and long-term degradation of the catch composition data collected for the management of these ITQ fisheries.

Current requirements would be modified under alternative 2 to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. Under any of the VMS trip declaration categories (i.e., Surfclam only, Quahog only, or Combined Surfclam /Quahog Trip), onboard sorting will be required to ensure tagged cages contain the clam species on the tag. This may slightly slow certain trips, to allow time for onboard sorting, and may result in increased operating costs for some trips. This will likely only impact some trips, not all vessel/processor groups, and it will depend on the extent to which vessels are fishing in beds with lots of surfclam and ocean quahog mixing occurring. However, alternative 2 could provide positive impacts as it would change current regulations and allow vessels to land mixed catches and allow them to operate more efficiently as requested by the industry. Alternative 2 is expected to have slight negative to slight positive impacts on the human communities when compared to current conditions, because of both the potential for some operating costs to increase for some trips and vessel/processor groups, and the modification of current regulations that allows for mixed catches.

Under alternative 3, current requirements would be modified to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. However, on a declared combined trip, the mixing of both clam species within the cages would be permitted with the implementation of a new NOAA Fisheries port sampling program to assess catch composition. Alternative 3 is expected to have negative impacts on the human communities when compared to current conditions, because of the new sampling program costs to be applied to the industry as whole. However, some slight positive impacts on the human communities are also expected when compared to current conditions, because of the modification of current regulations that allows for mixed catches and improvements to the catch composition data needed to manage these ITQ fisheries.

Alternative 4 would modify current requirements to create a new combined trip category, which would allow for both species (surfclam/ocean quahog) to be landed on the same trip. On a declared combined trip, the mixing of both clam species within the cages would be permitted with the implementation of a new onboard electronic monitoring (EM) program to assess catch composition data needed to manage these ITQ fisheries. While there may be costs associated with implementing EM technology borne by deploying the new technology to the industry (slight negative), the long-term benefits that could be realized through implementation may be slight positive. Under alternative 4, the technology and capabilities has not been fully developed so this is a longer-term solution that might take several years to implement.

When comparing all four alternatives for human communities, impacts are expected to range from negative to slight positive, compared to the current conditions. The magnitude of the negative impacts is expected to be greater under alterative 1 (i.e., slight negative to negative as a result of increased fishing operation costs and the degradation of catch data needed for management of these ITQ fisheries), followed by alternative 3 (i.e., negative due to costs of setting up new sampling program to slight positive), followed by alternative 4 (i.e., slight negative over the next few years as EM technology is developed and deployed, but slight positive longer term), and then, alternative 2 (i.e., slight negative to slight positive).

2.0 LIST OF FREQUENTLY USED ACRONYMS, CONVERSIONS, AND DEFINITIONS

Frequently Used Acronyms

ABC	Acceptable Biological Catch
ACT	Annual Catch Target
APSD	Analysis Program and Support Division
bu	Bushels
CEA	Cumulative Effects Assessment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIE	Center for Independent Experts
cm	Centimeter (0.393 inches)
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
ft^3	Cubic feet (7.48052 gallons; 0.03703 cubic yards)
FONSI	Finding of No Significant Impact
GARFO	Greater Atlantic Regional Fisheries Office
GB	Georges Bank
GOM	Gulf of Maine
GSC	Great South Channel
HMA	Habitat Management Area
IFQ	Individual Fishing Quota
IRFA	Initial Regulatory Flexibility Analysis
ITQ	Individual Transferrable Quota
km	Kilometer (0.621 miles)
LPUE	Landings Per Unit of Effort
m	Meter (3.280 feet)
MAFMC	Mid-Atlantic Fishery Management Council (Council)
MEO	Market Equilibrium Output
MFP	Multi-factor Productivity
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAICS	North American Industry Classification System Codes
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 (km) = 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 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.

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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)[1] 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 which are available at: http://www.mafmc.org, and briefly described below.

4.1 PURPOSE AND NEED OF THE ACTION

The purpose of this action is to modify the species separation requirements in the Atlantic surfclam and ocean quahog fisheries. Regulations will be modified to allow for mixed catches onboard vessels that presently are declared/targeting either surfclam or quahog. Regulations may be modified at various levels to address vessel trip declaration, onboard operations (e.g., sorting), cage tagging, and other regulations as needed.

This action to update fishery regulations is needed because of the increased frequency of mixed catches in these fisheries, an issue raised to the Council by the clam fishing industry. In addition, these regulatory changes are needed to improve data collection and monitoring of the surfclam and ocean quahog catches given the current incorrect assumption at present that 100 percent of the catch on a targeted trip is the targeted clam species. This is also inconsistent with the ITQ system which requires tags and allocation for each species to be landed. No enforcement or monitoring of these mixed catches is occurring, but industry and survey data indicate that the overlap of these species distributions is increasing.

4.2 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 remained unchanged until December 2019 when the Council approved revised goals and objectives 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.

[1] 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

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 (i.e., Maine mahogany quahog fishery).

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 surfclam and ocean quahog are summarized at: https://www.mafmc.org/surfclams-quahogs.

4.5 BACKGROUND ON THIS ACTION

Industry 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 to be 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 at the processing facilities. Despite both regulatory and economic incentives to avoid mixed catches, industry has indicated that this issue needs to be addressed because co-occurrence and mixing of these clams is occurring more frequently, and it may become a larger problem in the future due to climate change. For more details on this issue see Appendix A. In addition, the Council recognizes that the monitoring and enforcement issues associated with mixed catches of surfclam and ocean quahog are already upon us. Mixed catches are occurring but no enforcement or monitoring of these mixed catches is occurring – therefore, data are not being collected in a manner consistent with the requirements of these ITQ fisheries. Therefore, the Council has prioritized development of this action to address this emerging issue.

5.0 MANAGEMENT ALTERNATIVES

This amendment considers a range of alternatives to address changes to the species separation requirements in the surfclam and ocean quahog fisheries. 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. The complete analyses of the biological, economic, and social impacts of the alternatives are 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, respectively, at:
https://www.fisheries.noaa.gov/species/atlantic-surfclam and
https://www.fisheries.noaa.gov/species/ocean-quahog.

It should be noted that the following alternatives may provide a short-term solution to the mixing of surfclam and ocean quahog in fisheries catches (particularly alternative 2 and 3) while alternative 4 may provide a long-term solution. The Council is supportive of methods to develop longer-term solutions to this issue that provide for resilience as climate change may exacerbate this issue. The Council staff and NEFSC are actively exploring approaches that implement EM that may provide longer-term solutions. In general, the Council would be supportive of members of the fishing industry exploring long-term solutions through an exempted fishing program permit (see Appendix B) to conduct research into methods that would allow for effective monitoring of catches of both surfclam and ocean quahog.

5.1 Alternative 1 - No Action/Status Quo

Under this alternative, no changes would be made to the current regulations for surfclam and ocean quahog. This means the current requirements that state that only single species declared trips are permitted (i.e., a trip must be declared under the Vessel Monitoring System (VMS) as a surfclam or ocean quahog trip) and only that declared species may be landed and placed in cages on board the vessel, will remain in place. This alterative assumes that each ITQ tagged cage is 100% of the target species.

5.2 Alternative 2 - Allow Combined Trip Declaration and Require Onboard Sorting

Under this alternative, changes would be made to the current regulations for surfclam and ocean quahog. The current requirements that only single species declared trips are permitted would be modified to create a third declaration category to allow for trips to land both species under, combined trip (i.e., a trip must be declared under VMS as a surfclam trip, ocean quahog trip, or a combined surfclam/ocean quahog trip). The newly created combined trip category would allow for two species (surfclam/ocean quahog) to be landed on the same trip. Under any of the trip declaration categories, onboard sorting is required. For each of the trip categories:

- Surfclam trip: Onboard sorting is required to ensure the cages onboard the vessel are filled with surfclam only and the cage is tagged as surfclam.

- Ocean quahog trip: Onboard sorting is required to ensure the cages onboard the vessel are filled with ocean quahog only and the cage is tagged as ocean quahog.
- Combined trip: Onboard sorting is required to ensure the cages onboard the vessel contain either surfclam or ocean quahog only (i.e., no mixing of both species within the cages can occur) and cages are tagged as either surfclam or ocean quahog. This means those declaring combined trips must have obtained enough surfclam and ocean tags for their cages onboard.

No other changes would be made to the current regulations and all data reporting requirements would still apply. Industry identified this as a potential short-term solution that they could implement through their on-vessel operations.

5.3 Alternative 3 – Allow Combined Trip Declaration, Mixing of Clam Species within Cages (on a Declared Combined Trip), and Require Manual Port Monitoring of Combined Mixed Trips

Under this alternative, changes would be made to the current regulations for surfclam and ocean quahog. The current requirements that only single-species declared trips are permitted would be modified to create a third declaration category, which would allow for combined trips to land both species (i.e., a trip must be declared under VMS as a surfclam trip, ocean quahog trip, or a combined surfclam/ocean quahog trip). The newly created combined trip category would allow for two species (surfclam/ocean quahog) to be landed on the same fishing trip.

On a declared combined trip (i.e., a fishing trip that is allowed to land both surfclam and ocean quahog) the mixing of both clam species within the cages would be permitted with the implementation of a new NOAA Fisheries sampling program to assess catch composition. However, all cages must still be tagged prior to removal from the vessel, based on the dominant species (>50%) within each cage. This means those declaring combined trips must have obtained enough surfclam and ocean tags for their cages onboard.

A NOAA Fisheries sampling program will be developed to manually inspect and sample cages on arrival at the port of landing for all declared combined trips, to record the catch composition. The sampling intensity for each trip must be sufficient to provide reliable estimates of catch composition of both surfclam and ocean quahog for stock assessment purposes. This would be a new sampling program and would require a new suite of regulations to implement. In addition, a portion of the costs associated with this new program would be recovered through the cost recovery program for the government costs associated with implementing it.

The current ITQ tagging process presents challenges in terms of differentiating what is intended for processing (landings) versus what may be discarded and/or trashed and not processed at the facility. These issues would need to be addressed by NOAA Fisheries if this alternative were to be implemented.

5.4 Alternative 4 - Allow Combined Trip Declaration, Mixing of Clam Species within Cages (on a Declared Combined Trip), and Require Electronic Monitoring of Declared Combined Trips

Under this alternative, changes would be made to the current regulations for surfclam and ocean quahog. The current requirements that only single species declared trips are permitted would be modified to create a third declaration category to allow for trips to land both species under - combined trips (i.e., a trip must be declared under VMS as a surfclam trip, ocean quahog trip, or a combined surfclam/ocean quahog trip). The newly created combined trip category would allow for two species (surfclam/ocean quahog) to be landed on the same fishing trip.

On a declared combined trip (i.e., a fishing trip that is allowed to land both surfclam and ocean quahog), the mixing of both clam species within the cages would be permitted with the implementation of onboard EM requirements to assess the catch on those trips. However, all cages must still be tagged prior to removal from the vessel, based on the dominant species (>50%) within each cage. This means those declaring combined trips must have obtained enough surfclam and ocean tags for their cages onboard.

New EM regulations would be developed to require electronic inspection of the clams prior to the cages being filled – ideally the material would be inspected while traveling down the belt from the dredge to the cages, to record catch composition. This is a longer-term solution as it would require substantial technical development work to test and deploy this new technology. This technology may also be used in the future to assist the industry in assessing mixing levels as climate change makes this problem more relevant. In addition, a portion of the costs associated with this new program would be recovered through the cost recovery program for the government costs associated with implementing it.

The current ITQ tagging process presents challenges in terms of differentiating what is intended for processing (landings) versus what may be discarded and/or trashed and not processed at the facility. These issues would need to be addressed by NOAA Fisheries if this alternative were to be implemented.

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., 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

Atlantic surfclam are distributed along the western North Atlantic Ocean from the southern Gulf of St. Lawrence to Cape Hatteras. Surfclam occur in both the state territorial waters (≤ 3 miles from shore) and within the Exclusive Economic Zone (EEZ; 3-200 miles from shore). 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, quahog occur from Newfoundland to Cape Hatteras from depths of about 8 to 400 meters (26 to 1,312 ft). Ocean quahog further north occur closer to shore. 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; "Briefing Materials (Tab 2))." 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 1. 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.

Table 1. Federal Surfclam and Ocean Quahog Quotas and Landings: 1999 - 2021.

	Surfclam ('000 bu)			Ocean Quahog ('000 bu)		
Year	**Landings[a]**	**Quota**	**% Harvested**	**Landings[b]**	**Quota**	**% Harvested**
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%	3,587	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%	3,022	5,333	56%
2016	2,339	3,400	69%	3,079	5,333	58%
2017	2,192	3,400	64%	3,178	5,333	59%
2018	2,110	3,400	62%	3,220	5,333	60%
2019	1,943	3,400	57%	2,464	5,333	46%
2020	1,560	3,400	46%	2,006	5,333	38%
2021	1,602[c]	3,400	47%	2,259[c]	5,333	42%

[a] 1 surfclam bushel is approximately 17 lb. [b] 1 ocean quahog bushel is approximately 10 lb. [c] Preliminary, incomplete 2021 data. NA = Not yet available. Source: NMFS Clam Vessel Logbook Reports.

6.1.1.1 Basic Biology

6.1.1.1.1 Atlantic Surfclam

Information on 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: https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/essential-fish-habitat-efh-northeast. 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 surfclam are distributed along the western North Atlantic Ocean from the southern Gulf of St. Lawrence to Cape Hatteras. Surfclam 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, surfclam 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 surfclam is about 22.5 cm (8.9 inches) shell length, but surfclam larger than 20 cm (7.9 inches) are rare. The maximum age exceeds 30 years and surfclam of 15-20 years of age are common in many areas. Surfclam 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. Settlement to the bottom occurs after a planktonic larval period of about three weeks.

Atlantic surfclam are suspension feeders on phytoplankton and use siphons which are extended above the surface of the substrate to pump in water. Predators of surfclam 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: https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/essential-fish-habitat-efh-northeast. 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, ocean quahog occur from Newfoundland to Cape Hatteras from depths of about 8 to 400 meters (26 to 1,312 ft). Ocean quahog 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 (66 to 262 ft). However, in the northern range, ocean quahog 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 quahog burrow in a variety of substrates and are often associated with fine sand.

Ocean quahog 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 quahog off the coast of the U.S. 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% of female ocean quahog 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 quahog are relatively unproductive and able to support only low levels of fishing. The current resource consists of individuals that accumulated over many decades.

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

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 at: https://www.fisheries.noaa.gov/new-england-mid-atlantic/population-assessments/northeast-region-stock-assessment-process. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at: https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/essential-fish-habitat-efh-northeast/.

6.1.2.1 Atlantic Surfclam

The 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 at: https://www.fisheries.noaa.gov/new-england-mid-atlantic/population-assessments/northeast-region-stock-assessment-process.

The most recent assessment of the surfclam stock is a management track assessment of the existing benchmark Stock Synthesis assessment (SAW 61; NEFSC 2017). This management track assessment indicated the stock was not overfished and overfishing was not occurring (Figures 1-2). Retrospective adjustments were not made to the model results. Spawning stock biomass (SSB) in 2019 was estimated to be 1,222 (’000 mt) which is 119% of the biomass target (SSB_{MSY} proxy

= 1,027; Figure 1). The 2019 fully selected fishing mortality was estimated to be 0.036 which is 25.8% of the overfishing threshold proxy (F_{MSY} proxy = 0.141; Figure 2).

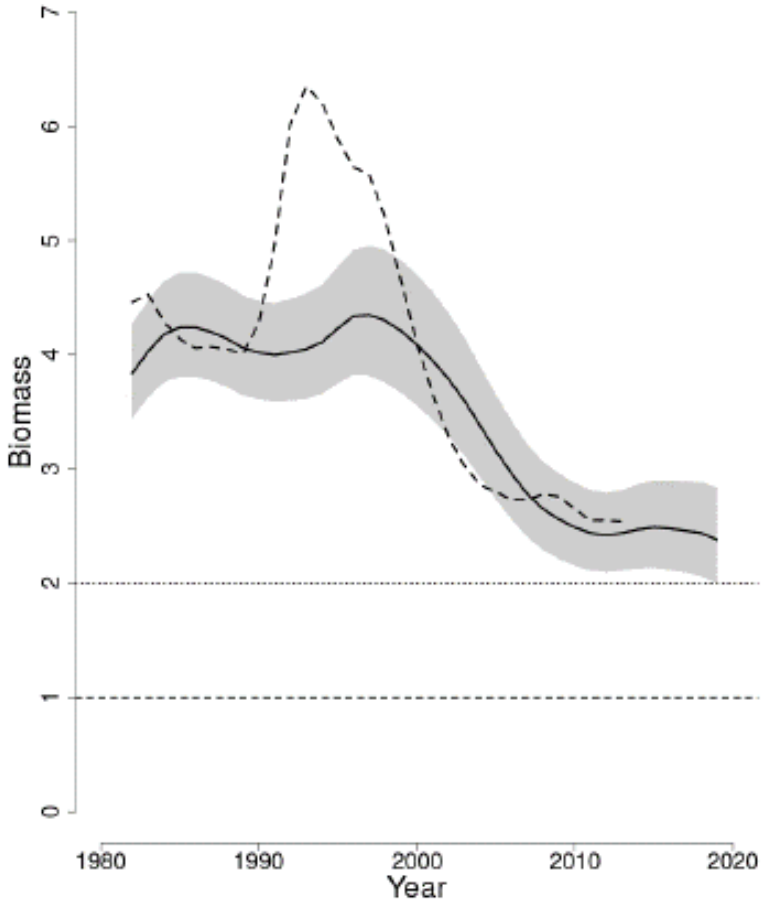

Figure 1. Trends in spawning stock biomass of Atlantic surfclam between 1982 and 2019 from the current (solid line) and previous (dashed line) assessment and the corresponding $SSB_{Threshold}$ (½ $SSB_{MSY\ proxy}$; horizontal dashed line) as well as SSB_{Target} ($SSB_{MSY\ proxy}$; horizontal dotted line) based on the 2020 assessment. Units of SSB are the ratio of annual biomass to the biomass threshold ($SSB/SSB_{Threshold}$). The approximate 90% lognormal confidence intervals are shown (Hennen 2020).

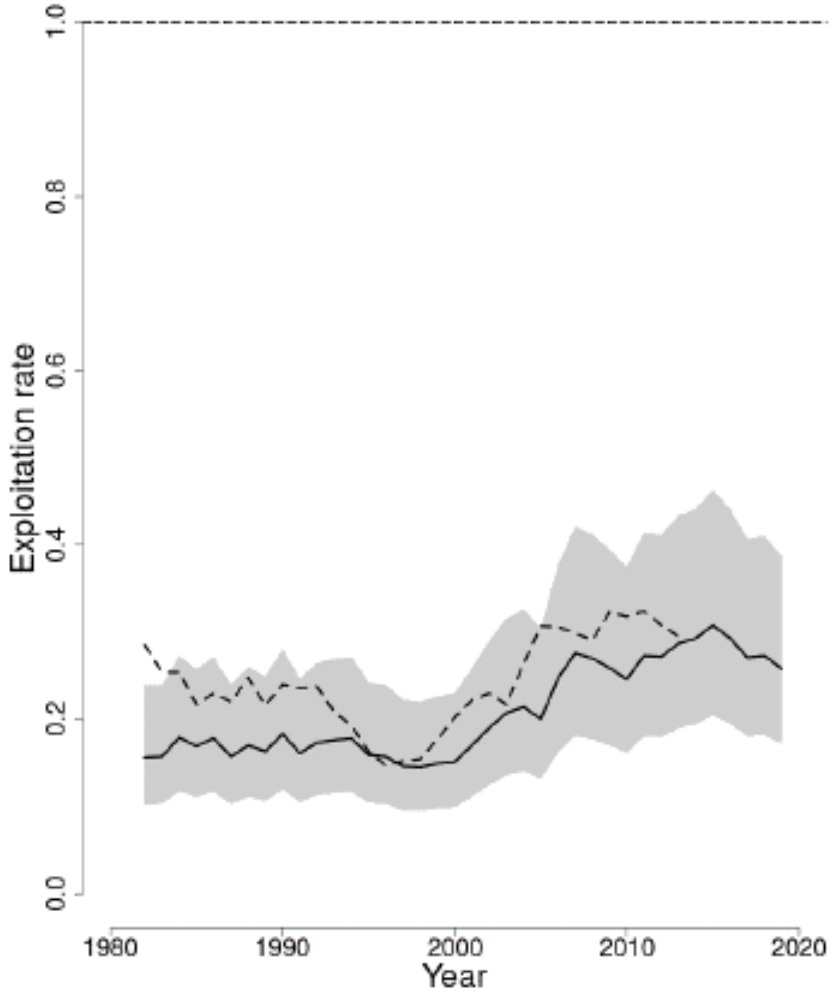

Figure 2. Trends in the fully selected fishing mortality (F_{Full}) of Atlantic surf-clam between 1982 and 2019 from the current (solid line) and previous (dashed line) assessment and the corresponding $F_{Threshold}$ ($F_{MSY\ proxy}$=0.141; horizontal dashed line), based on the 2020 assessment. Units of fishing mortality are the ratio of annual F to the F threshold ($F/F_{Threshold}$). The approximate 90% lognormal confidence intervals are shown (Hennen 2020).

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 at: https://www.fisheries.noaa.gov/new-england-mid-atlantic/population-assessments/northeast-region-stock-assessment-proces.

The most current assessment of the ocean quahog stock is a management track assessment of the existing 2017 benchmark Stock Synthesis assessment (SAW 63; NEFSC 2017). Based on the previous assessment the stock was not overfished, and overfishing was not occurring. The management track assessment updates commercial fishery catch data, and commercial length composition data, as well as the analytical SS assessment model and reference points through 2019. No new survey data have been collected since the last assessment.

Based on this updated assessment, the ocean quahog stock is not overfished and overfishing is not occurring (Figures 3-4). Retrospective adjustments were not made to the model results. Spawning stock biomass (SSB) in 2019 was estimated to be 3,651 ('000 mt) which is 172.8% of the biomass target ($SSB_{MSY\ proxy}$ = 2,113; Figure 3). The 2019 fully selected fishing mortality was estimated to be 0.005 which is 25.5% of the overfishing threshold proxy ($F_{MSY\ proxy}$ = 0.019; Figure 4).

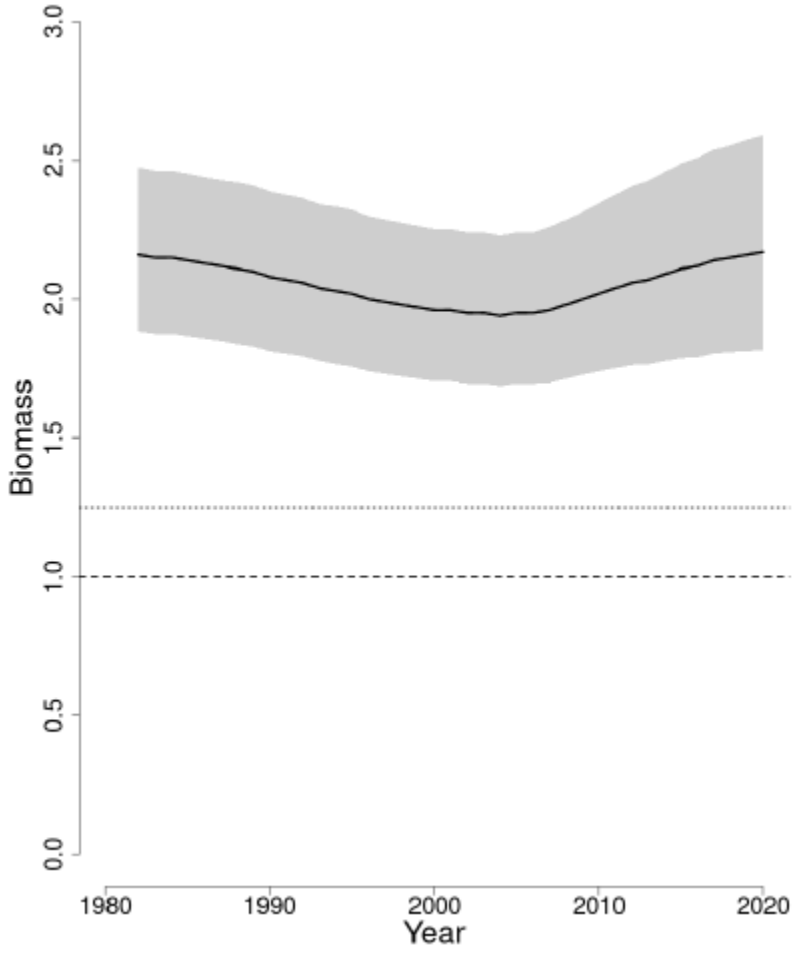

Figure 3. Trends in spawning stock biomass of ocean quahog between 1982 and 2020 from the current (solid line) and previous (dashed line) assessment and the corresponding $SSB_{Threshold}$ (horizontal dashed line) as well as SSB_{Target} ($SSB_{MSY\ proxy}$; horizontal dotted line) based on the 2020 assessment. Units of SSB are the ratio of annual biomass to the biomass threshold ($SSB/SSB_{Threshold}$). The approximate 90% lognormal confidence intervals are shown (Hennen 2020).

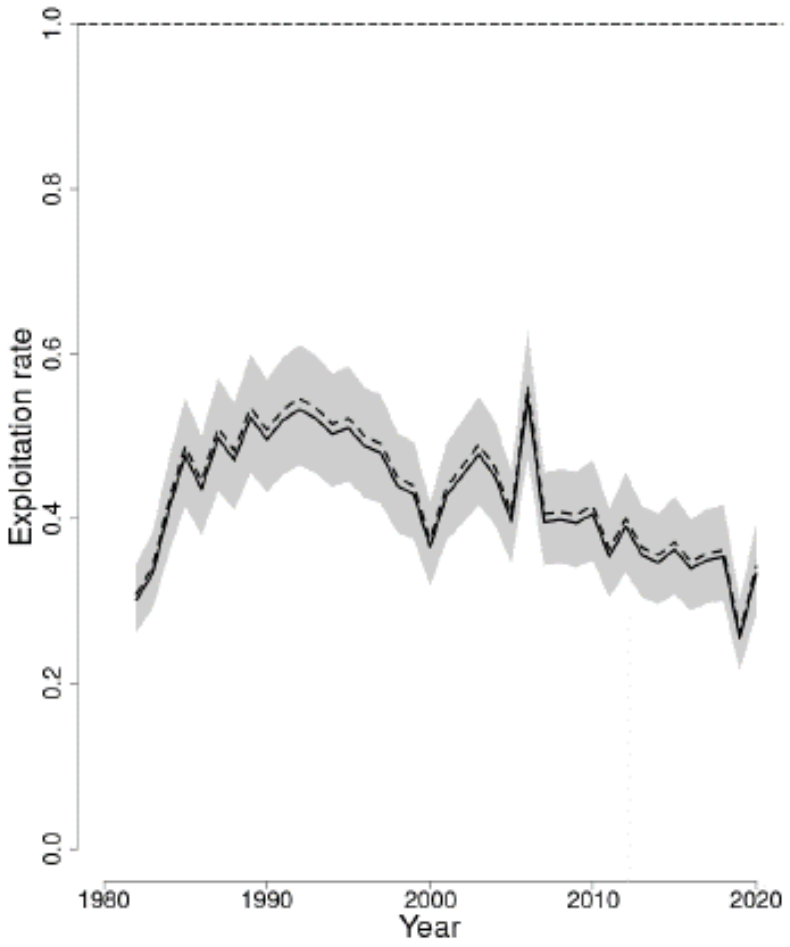

Figure 4. Trends in the fully selected fishing mortality (F_{Full}) of ocean quahog between 1982 and 2020 from the current (solid line) and previous (dashed line)assessment and the corresponding $F_{Threshold}$ ($F_{MSY\ proxy}$=0.019; horizontal dashed line), based on the 2020 assessment. Units of fishing mortality are the ratio of annual F to the F threshold ($F/F_{Threshold}$). The approximate 90% lognormal confidence intervals are shown (Hennen 2020).

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) for the stock assessments in 2017. There have been very few observer trips in recent years (particularly in the most recent years due to COVID-19 related-issues); however, the pattern of observed non-targets species are expected to be similar.

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% 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 2 and 3. 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 quahog, and the ocean quahog fishery discards surfclam.

Table 4 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 5 and 6 list the amounts and types of bycatch reported from individual trips to show variability between trips.

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

Table 2. 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 3. 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 4. 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 5. 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 6. 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

Based on NOAA Fisheries Status of Stock 2021 Report (1st Quarter 2021 Update; https://www.fisheries.noaa.gov/national/sustainable-fisheries/status-stocks-2021#more-information the sea scallop stock was not overfished, and overfishing was not occurring and little skate and winter skate are not overfished and are not subject to overfishing, nor is monkfish overfished or subject to overfishing. In addition, 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

Surfclam and ocean quahog 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.

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 7).

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 groynes, 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 7. 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: https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/essential-fish-habitat-efh-northeast/. 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% of all the ranked ten-minute squares for the area where surfclam were caught in the NEFSC surfclam and ocean quahog dredge surveys. Surfclam 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% of all the ranked ten-minute squares for the area where ocean quahog 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 quahog 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 the NOAA Fisheries EFH Mapper, which is available at: https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper.

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). 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 (Northeast Region Essential Fish Habitat Steering Committee 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 paralytic shellfish poisoning (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 efficiently 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.[2] 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 (Northeast Region Essential Fish Habitat Steering Committee 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 surfclam and 3.5 inches for ocean quahog. 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 (Northeast Region Essential Fish Habitat Steering Committee 2002).

In the SASI model, susceptibility and recovery were only evaluated for hydraulic clam dredges for sand and granule-pebble substrates because at the time it was believed that this gear could not be operated in mud or in rocky habitats (Northeast Region Essential Fish Habitat Steering Committee 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.

In the SASI model analysis, hydraulic dredges were given higher vulnerability scores than otter trawls and scallop dredges in sand and small gravel (granule-pebble) substrates, and much

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

higher vulnerability scores than the fixed gears. Across all gears, geological and biological features were 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 were slightly higher (i.e., longer recovery) 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 were more similar for biological features across the three mobile gear types, although in a few cases estimated recovery times were 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 5 and 6). In addition, the OHA2 included indefinite exemptions for hydraulic clam dredges in many of the HMAs and a temporary exemption for the Great South Channel HMA for a year after implementation of OHA2 to allow time for the NEFMC to consider creating access areas within this HMA. (A temporary exemption in the Georges Shoal HMA was also approved by the Council, but this proposed HMA was subsequently disapproved by NOAA). The approved HMAs included: (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, (h) identifying the existing Gulf of Maine Roller Gear restriction as a habitat protection measure, and (i) prohibiting the use of mobile bottom-tending gear in the Great South Channel HMA, subject to the outcome of subsequent clam dredge exemption actions by the Council and NOAA.[3]

As indicated above, the surfclam and ocean quahog fisheries were granted a one year exemption (which expired on April 8, 2019) for the Great South Channel HMA following implementation of OHA2. In subsequent actions, the NEFMC considered possible clam dredge exemptions in several areas within the Great South Channel HMA 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 was approved by NOAA on May 19, 2020, and became effective on June 18, 2020. It

[3] Source: NMFS Approves "Majority" of Council's Habitat Amendment

established exemptions for clam and mussel dredges in two year-round access areas within the HMA and seasonal access in a third area (Figure 6).[4]

[4] For additional information see: https://www.nefmc.org/library/clam-dredge-framework

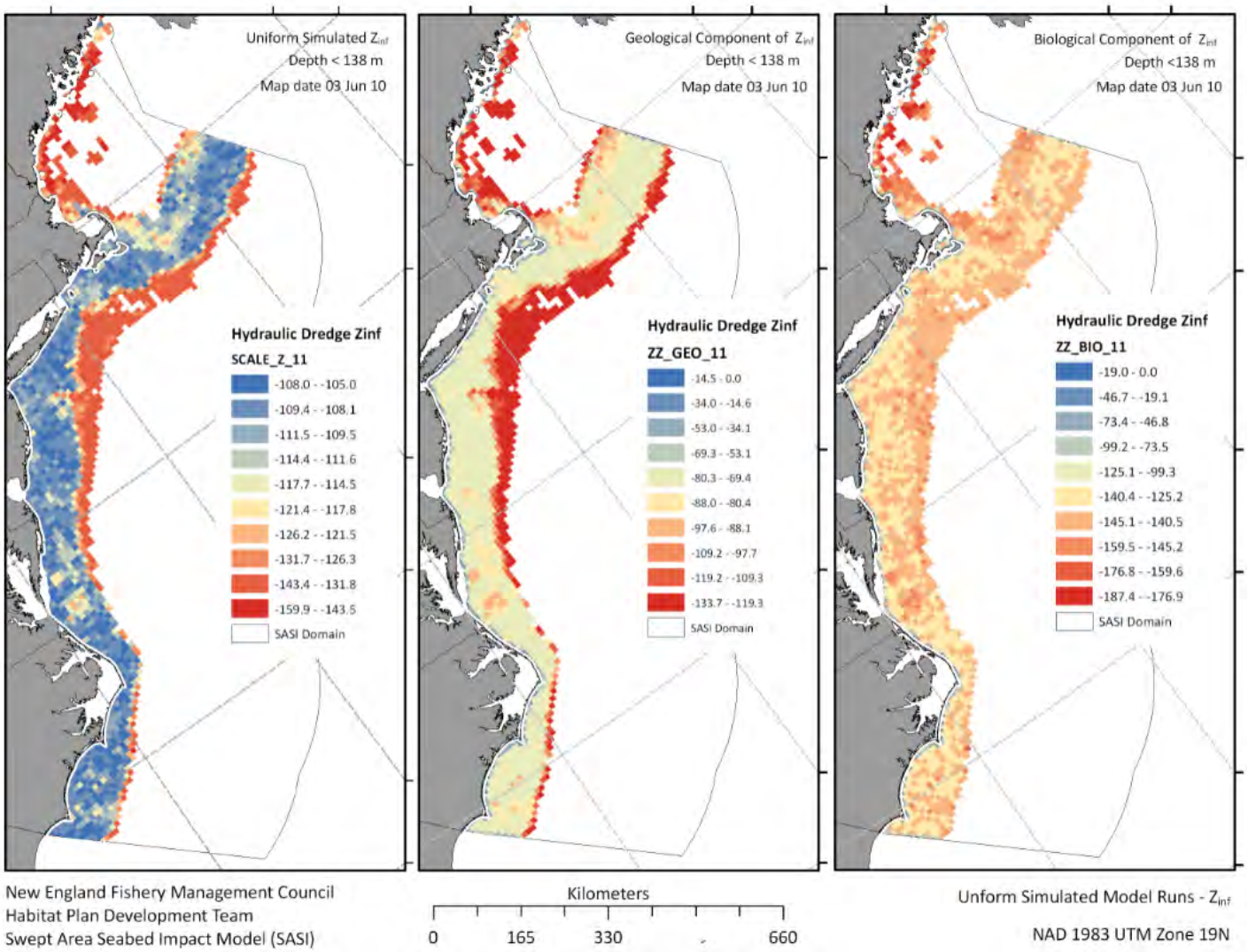

Figure 5. Simulation outputs ($Z\infty$) for hydraulic dredge gear (left panel shows combined vulnerability of geological (mid-panel) and biological features (right-panel); blue = low vulnerability, red = high vulnerability).
Source: https://www.nefmc.org/library/omnibus-habitat-amendment-2

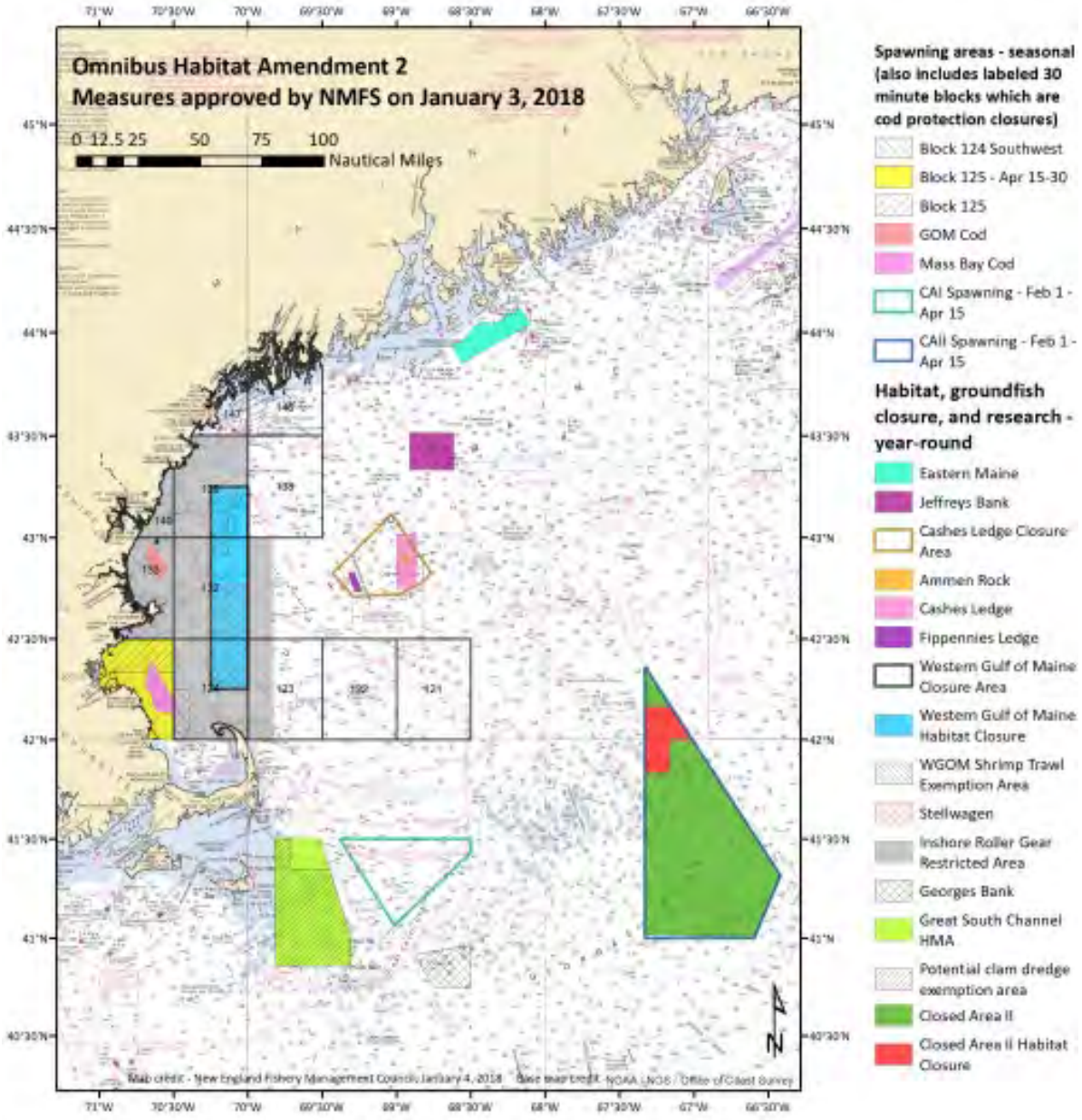

Figure 6. OHA2 approved regulations.

Source: NMFS Approves "Majority" of Council's Habitat Amendment

6.3 ESA and MMPA Protected Species

Numerous protected species inhabit the affected environment of the Atlantic Surfclam and Ocean Quahog FMP (Table 8). 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 8, including their environment, ecological relationships and life history information including recent stock status, are available at: https://www.fisheries.noaa.gov/region/new-england-mid-atlantic#species 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 (50 CFR §402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, cusk 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 quahog are prosecuted with hydraulic 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 8). 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 2021; NMFS NEFSC observer/sea sampling database (unpublished data); see; http://www.nmfs.noaa.gov/pr/sars/region.htm; and, https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries).

As provided in Table 8 and Figure 7, North Atlantic right whale critical habitat also occurs in the affected environment of the surfclam/ocean quahog FMP. This action is not likely to adversely affect North Atlantic right whale 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 critical habitat and, and therefore, will not result in the destruction or adverse modification of this species critical habitat (NMFS 2015a,b). Support for this determination is provided in the discussion below.

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.

The boundaries of Unit 1 were defined by the distribution, aggregation, and retention of *Calanus finmarchicus,* the primary and preferred copepod 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 C).

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 *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.

Taking into consideration the above, 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). Based on this, the proposed action does not meet the adverse modification threshold and is not expected to impact right whale recovery.

Table 8. 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 impacted 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
Giant manta ray (*Manta birostris)*	Threatened	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.

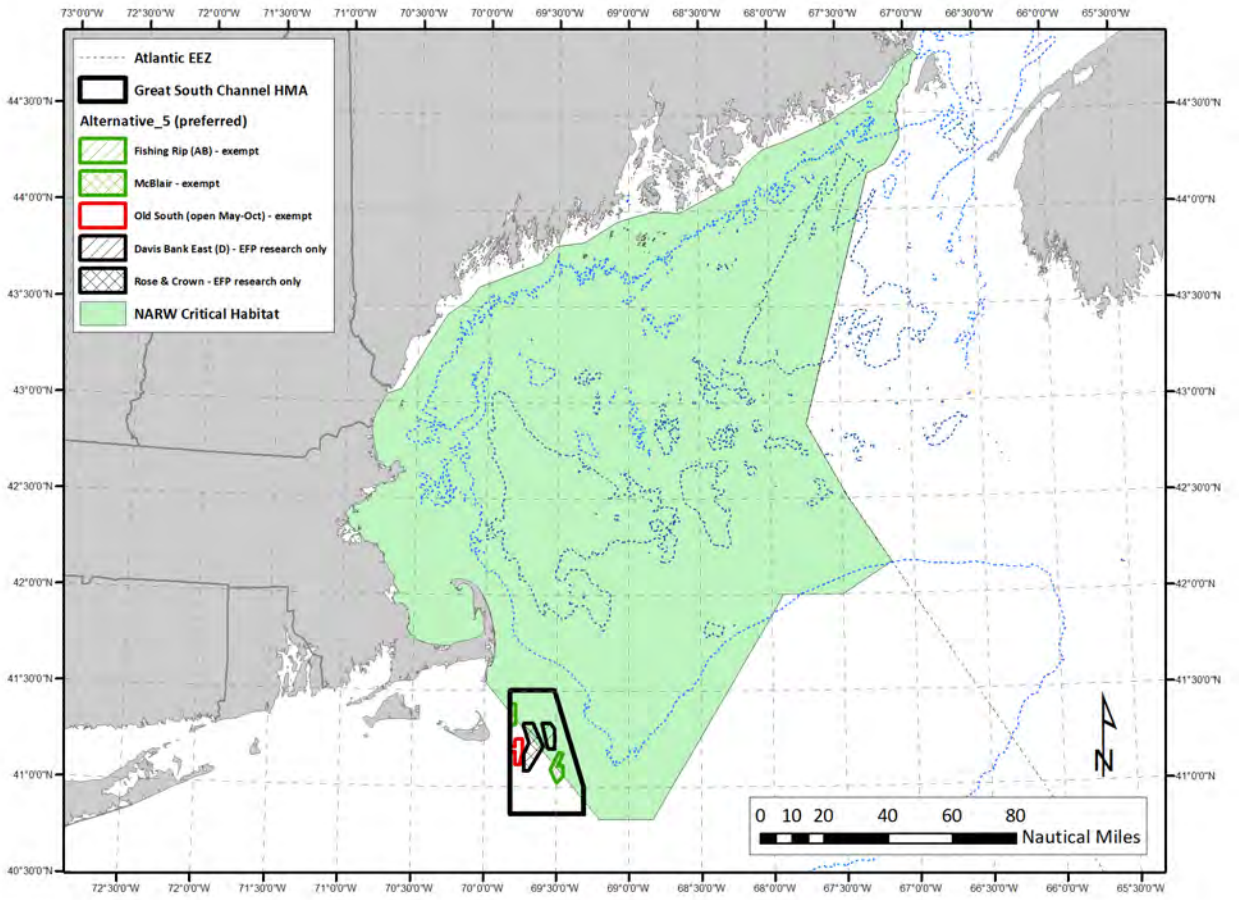

Figure 7. North Atlantic Right Whale Critical Habitat in the Gulf of Maine, GSC HMA. Additional areas of critical habitat are designated along the coasts of South Carolina, Georgia, and Florida, but are not shown here.

6.4 Human Communities

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 at that time, etc. are fully described in Amendment 13. Communities from Maine to Virginia are involved in the harvesting and processing of surfclam and ocean quahog (MAFMC 2003). For surfclam and ocean quahog, there used to be occasional landings in Ocean City, MD, but with fuel prices and trucking issues industry has indicated they are not occurring anymore. Cape May and Wildwood, NJ are also no longer significant. Most of the fleet is currently fishing out of Pt. Pleasant and Atlantic City, NJ, Oceanview, NY, and New Bedford and Fairhaven, MA. Hyannis, MA (surfclam only) landings have been recently reduced over the last few months. Cape Charles, VA is a revived port of landings targeting surfclams off the Virginia coast. Trucking costs and the distance needed to travel to harvest clams has put greater

economy on scale and location. The small scale Maine fishery is entirely for ocean quahog, which are sold as shellstock for the half-shell market (MAFMC 2022b). The other fisheries are industrialized ones for surfclam and ocean quahog, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products (MAFMC 2022a,b).

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 9). In 2021, about 1.6 million bushels of surfclam were landed, slighlty lower than 2019 at 1.9 million bushels (Table 1). The average ex-vessel price of surfclams reported by processors was $14.90 in 2021, slightly higher than the $14.48 per bushel seen in 2020. The total ex-vessel value of the 2021 federal harvest was approximately $24 million, which is higher than $23 million in 2020. Industry has described several factors that have affected their industry, including COVID-19 impacts. Trips harvesting surfclam have increased in length as catch rates have declined.

As indicated above, surfclam 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 must adhere to the recently adopted testing protocol developed by the National Shellfish Sanitation Program.

6.4.1.2 Ocean Quahog

The total number of vessels targeting ocean quahog outside of Maine has remained about the same in recent years; with 20 vessels in 2021 (Table 9). 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 3 vessels in 2021 (Table 9).The average ex-vessel price of non-Maine ocean quahog reported by processors in 2021 was $7.79 per bushel, slightly lower than the 2020 price ($7.81 per bushel). In 2021, about 2.3 million bushels of non-Maine ocean quahog were

landed, an increase from 2.0 million bushels in 2020. The total ex-vessel value of the 2021 federal harvest outside of Maine was approximately $18 million, higher than the $16 million in 2020.

In 2021, the Maine ocean quahog fleet harvested a total of 17,387 Maine bushels, an 86% decrease from the 124,839 bushels harvested in 2006, but a slight increase from the prior year (2019; 16,621 bushels). Average prices for Maine ocean quahog had declined substantially over time but have recently show an increasing trend. 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. In 2021, the mean price was $39.44 per Maine bushel. The value of the 2021 harvest reported by the purchasing dealers totaled $0.69 million.

6.4.2 Description of the Areas Fished

A detailed description of the areas fished by the fisheries for surfclam and ocean quahog 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 8 and 9. 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 quahog in federal waters is prosecuted with large vessels and hydraulic dredges, and is very different from the small Maine quahog fishery, which is prosecuted with small vessels (35-45 ft) and non-hydraulic “dry” dredges. The Maine fishery is located in eastern Maine (not shown in Figures 8 and 9).

6.4.3 Port and Community Description

Communities from Maine to Virginia are involved in the harvesting and processing of surfclam and ocean quahog. For surfclam and ocean quahog, there used to be occasional landings in Ocean City, MD, but with fuel prices and trucking issues industry has indicated they are not occurring anymore. Cape May and Wildwood, NJ are also no longer significant. Most of the fleet is currently fishing out of Pt. Pleasant and Atlantic City, NJ, Oceanview, NY, and New Bedford and Fairhaven, MA. Hyannis, MA (surfclam only) landings have been recently reduced over the last few months. Cape Charles, VA is a revived port of landings targeting surclams off the Virginia coast. The small scale Maine fishery is entirely for ocean quahog, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclam and ocean quahog, 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).

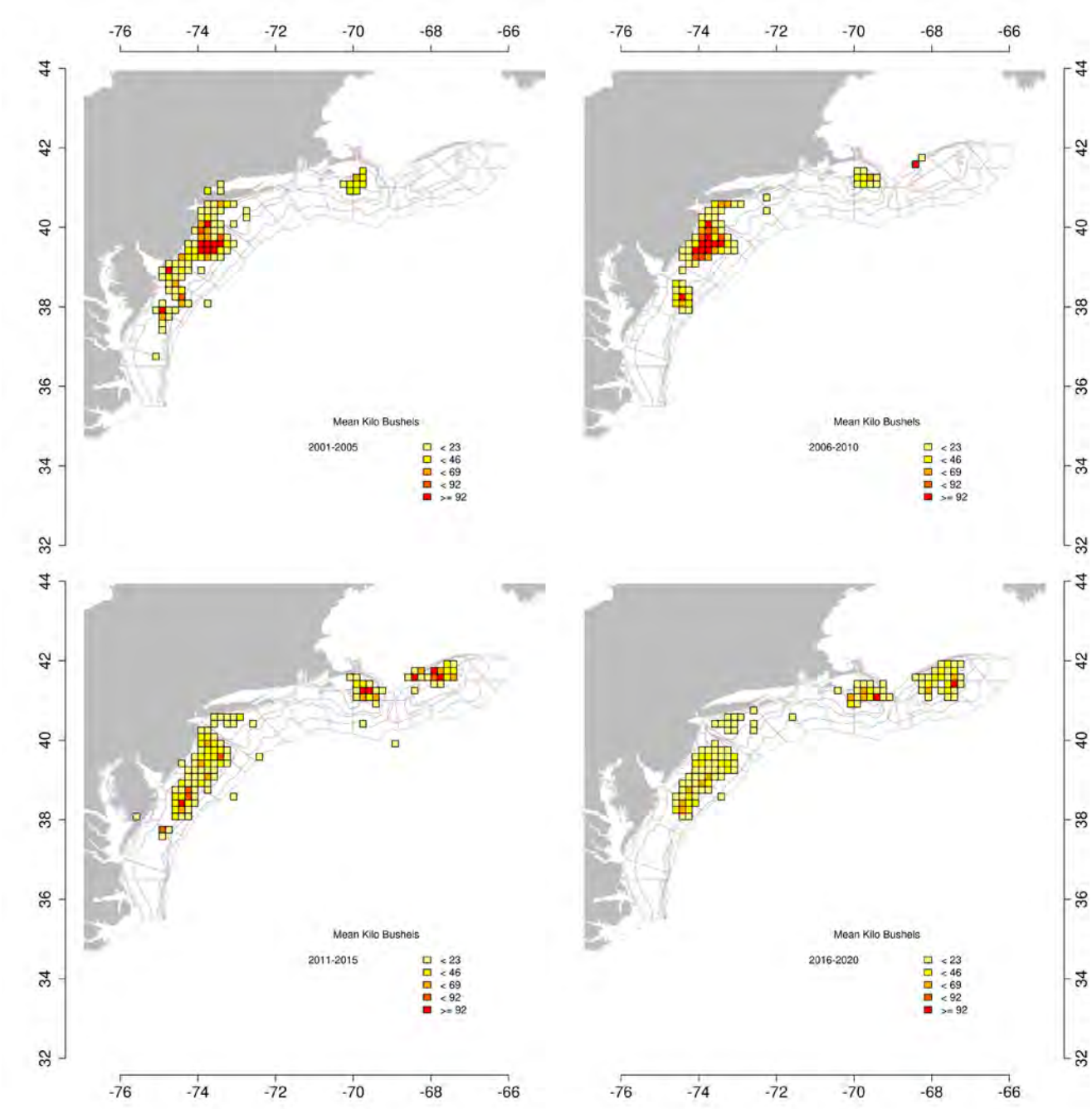

Figure 8. Average surfclam landings by ten-minute squares over time, 2001-2020, and preliminary 2021. Only squares where more the 5 kilo bushels were caught are shown (Hennen 2022).

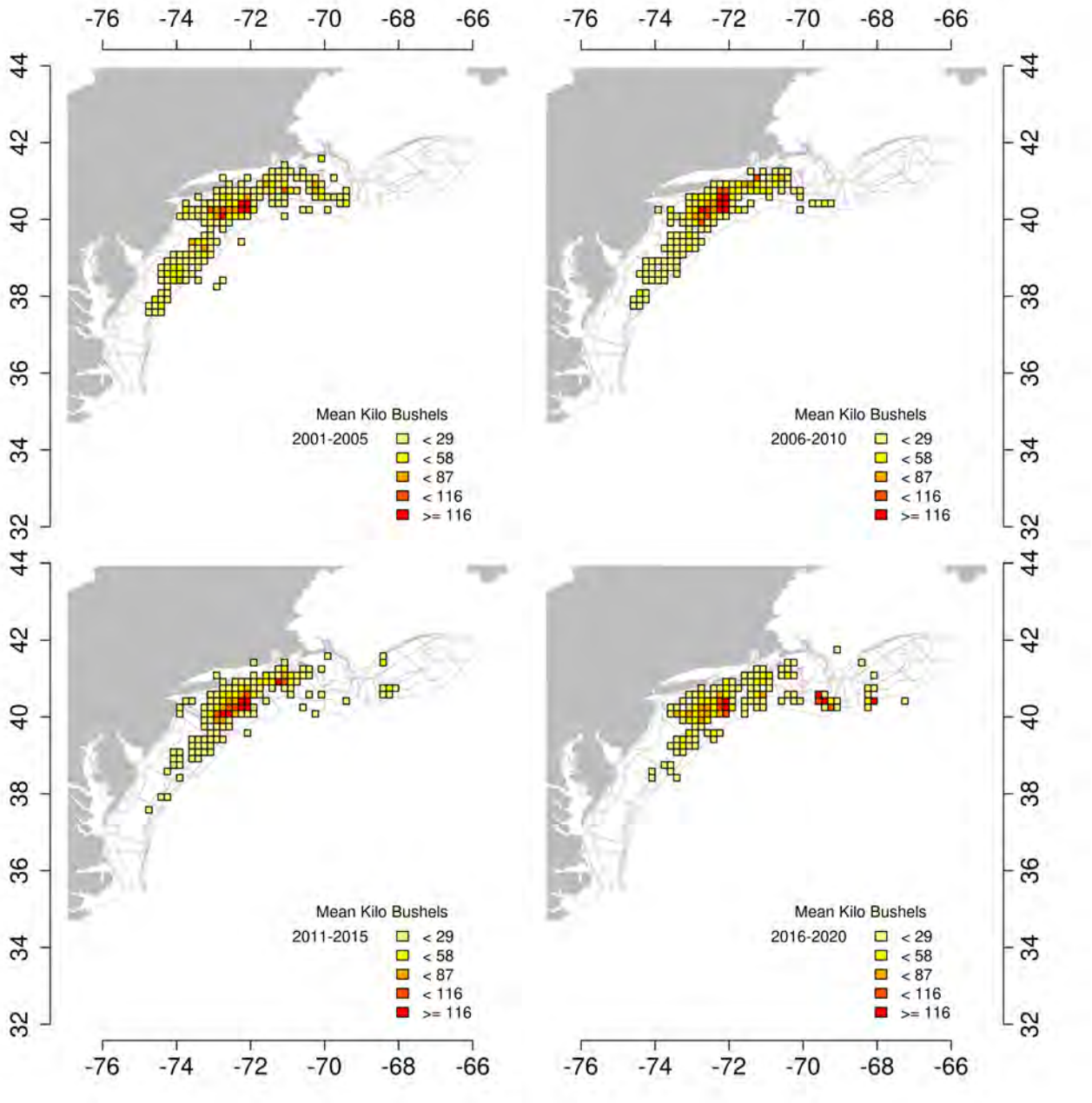

Figure 9. Average ocean quahog landings by ten-minute squares over time, 2001-2020, and preliminary 2021. Only squares where more the 5 kilo bushels were caught are shown (Hennen 2022).

6.4.4 Vessels and Dealers

Vessels

Initially, 154 vessels received ITQ allocation in 1990; however, in the last decade there have been fewer than 50 vessels participating in the fisheries each year. The total number of vessels participating in the surfclam fishery has been relatively stable from 2004 through 2021, ranging from 29 vessels in 2006 to 43 vessels in 2020 (Table 9).[5] The total number of vessels participating in the ocean quahog fisheries outside the state of Maine has experienced a downward trend. The 30 or so vessels that reported ocean quahog landings during 2004 and 2005 was reduced and coast-wide harvests consolidated on to 20 vessels in 2021. The Maine ocean quahog fleet numbers started to decline with fuel prices soaring in mid-2008 and totaled 3 in 2021 (Table 9).

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 recent years, a handful of independent vessels (less than 5) reported landings of surfclam and ocean quahog.

Dealers

In 2021, there were 8 companies reporting purchases of surfclam and/or ocean quahog in 5 states outside of Maine. Employment data for these specific firms are not available. In 2021, these companies bought approximately $24 million worth of surfclam and $18 million worth of ocean quahog.

[5] 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 9. Surfclam and ocean quahog active vessels composition, 2004-2021.

Vessel-type	Harvested Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Non-Maine Vessels	Both surfclam & quahog	14	12	9	9	8	8	12	12	13	7	7	6	8	14	8	7	8	10
	Only surfclam	21	24	20	24	24	28	22	24	29	33	31	31	30	26	31	36	35	31
	Only quahog	15	12	9	8	10	7	9	7	6	9	9	10	9	8	14	8	7	10
	Total	50	48	38	41	42	43	43	43	48	49	47	47	47	48	53	48	50	51
Maine Vessels	Only quahog	34	32	25	24	22	19	15	13	12	11	9	8	8	8	8	8	6	3

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 alternative 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 10 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 11.

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

Species Separation Alternatives

- **Alternative 1**: No Action/*Status Quo* – No changes to species separation requirements
- **Alternative 2**: Allow Combined Trip Declaration and Require Onboard Sorting
- **Alternative 3**: Allow Combined Trip Declaration, Mixing of Clam Species within Cages (on a Declared Combined Trip), and Require Manual Port Monitoring of Declared Combined Trips
- **Alternative 4**: Allow Combined Trip Declaration, Mixing of Clam Species within Cages (on a Declared Combined Trip), and Require Electronic Monitoring of Declared Combined Trips)

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 or regulatory components (e.g., annual quota, minimum size, cage identification) 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 10).

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 10). In addition, alternatives that result in continued fishing effort may result in slight negative impacts. The commercial fisheries for surfclam and ocean quahog 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 10). 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 reduce regulation burdens or enhance the way the fishery operates may positively impact fishing operations and practices.

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. The alternatives presented in this document (i.e., to modify species separation requirements) are not expected to have impacts on the overall prosecution of these fisheries. They are not expected to impact fishing effort, catch and landings levels, fishery distribution, or fishing methods while the dredge gear is being deployed to catch surfclam and ocean quahog. These alternatives are however expected to impact some aspects of on vessel operations - such as trip declaration, onboard sorting, and the monitoring of catch on board or dockside.

Table 10. General definitions for impacts and qualifiers relative to resource condition (i.e., baseline) summarized in Table 1 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 would maintain or are projected to result in a stock status above an overfished condition*	Alternatives that would 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 (e.g., no take)	Alternatives that result in interactions/take of listed resources, 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 will maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammal species 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 for details)	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
	Moderately (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 11. Baseline conditions of VECs considered in this action, as summarized in section 6.0.

VEC		Baseline Condition	
		Status/Trends, Overfishing?	Status/Trends, Overfished?
Target stocks (section 6.1.1 and 6.1.2)	**Atlantic surfclam**	No	No
	Ocean quahog	No	No
Non-target species (principal species listed in section 6.1.3)	**Moon snail**	Unassessed	Unassessed
	Sea scallop	No	No
	Little skate	No	No
	Winter skate	No	No
	Monkfish	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 Ocean 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. 2021 estimated ex-vessel revenues were $24 and $18 million for surfclam and ocean quahog, respectively. Most of the fleet is currently fishing out of Pt. Pleasant and Atlantic City, NJ, Oceanview, NY, and New Bedford and Fairhaven, MA. Hyannis, MA (surfclam only) landings have been recently reduced over the last few months. Cape Charles, VA is a revived port of landings targeting surclams off the Virginia coast. The small scale Maine fishery is entirely for ocean quahog, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclam and ocean quahog, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products. In 2021, there were 63 surfclam and 31 ocean quahog allocations owners at the beginning of the fishing year. A total of 54 vessels were active in these fisheries in 2017, including a handful of independent vessels (less than 5).	

7.1 Impacts of the Alternatives on Atlantic Surfclam and Ocean Quahog and Non-Target Species

Under alternative 1 (no action/*status quo*), there would be no changes to the current species separation requirements as established in the FMP and regulations. This alterative would fail to address the emerging issue of mixed catches in these fisheries (an issue raised to the Council's attention by the fishing industry).

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. 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 2-4 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 overall prosecution of the surfclam and ocean quahog fisheries, including landings levels, distribution of fishing effort, or fishing methods and practices are not expected to change under this alternative. Alternative 1 is expected to have the same impacts (no impacts) on non-target species as alternatives 2-4 described below.

Alternatives 2-4 propose changes to aspects of on vessel operations - such as trip declaration, onboard sorting, and/or the monitoring of catch on board or dockside. These alternatives are expected to have no impact on the overall prosecution of these fisheries, including landings levels, distribution of fishing effort, or fishing methods while the dredge gear is being deployed to catch surfclam and ocean quahog.

Alternatives 2-4 are therefore 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 2-4 would have neutral impacts on both target species, and non-target species.

7.2 Impacts of the Alternatives on the Physical Habitat

As described in section 7.0, the commercial fisheries for surfclam and ocean quahog 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 overall prosecution of these fisheries, including landings levels, distribution of fishing effort, or fishing methods while the dredge gear is being deployed to catch surfclam and ocean quahog. They will only impact some aspects of on vessel operations - such as trip declaration, onboard sorting, and the monitoring of catch on board or dockside.

Under alternative 1 (no action/*status quo*), there would be no changes to the current species separation requirements as established in the FMP and regulations. The no action alternative is not expected to impact fishery interactions with habitat, including EFH (either directly or indirectly). Alternatives 1 is expected to have the same impacts on habitat, including EFH as alternatives 2-4 described below. Because there is no change in the level of impacts to habitat as these alternatives are not expected to impact the overall prosecution of these fisheries, we expect continued minor, adverse impacts (negative impacts) to habitat will continue to occur. Surfclam and ocean quahog clam dredges would be expected to continue to interact with the bottom habitat, as they have in the past.

Alternatives 2-4 propose changes to aspects of on vessel operations - such as trip declaration, onboard sorting, and/or the monitoring of catch on board or dockside. Alternatives 2-4 are not expected to impact fishery interactions with habitat, including EFH (either directly or indirectly). Relative to each other, and alternative 1 (no action), alternatives 2-4 would continue to have minor, negative impacts on habitat, including EFH because of the ongoing prosecution of these fisheries. Impacts across all four alternatives would be expected to be similar.

7.3 Impacts of the Alternatives on Protected Resources

Under alternative 1 (no action/s*tatus quo*), there would be no changes to the current species separation requirements as established in the FMP and regulations. As such, the no action alternative on the prosecution of the surfclam and ocean quahog fisheries, including landings levels, fishery distribution, 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 8 (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 2-4, alternative 1 would have neutral impacts to protected species.

In addition, as described in section 7.1, the actions considered under alternatives 2-4, propose changes to aspects of on vessel operations - such as trip declaration, onboard sorting, and/or the monitoring of catch on board or dockside. They would not result in changes to other aspects of the of these fisheries, including landings levels, distribution of fishing effort, or fishing methods while the dredge gear is being deployed to catch surfclam and ocean quahog.

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 2-4 are not expected to adversely affect any protected species provided in Table 8 (section 6.3). For these reasons, alternatives 2-4 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 2-4 would have neutral impacts on protected species.

7.4 Impacts of the Alternatives on Human Communities (Socioeconomic Impacts)

Under alternative 1 (no action/*status quo*), there would be no changes to the current species separation requirements as established in the FMP and regulations. This alterative would fail to address the emerging issue of mixed catches in these fisheries (an issue raised to the Council's attention by the fishing industry).While industry has indicated they are presently avoiding fishing in areas that produce high levels of mixed catches, there is the potential that the extent of mixing and overlap of both clam species will continue to increase as water temperature continue to rise and species distributions continue to shift. These gradual changes have the potential to increase onboard costs by requiring them to undertake more effort to avoid mixed areas, increased voluntarily sorting and discarding, or modifications to other practices on board that may slow onboard operations, resulting in increased operational costs to land a similar number of clams. In addition, the failure to document and collect data on the extent of mixed catches on board vessels would continue to degrade the data collected to support the management of the surfclam and ocean quahog ITQ fisheries. Therefore, to not take any action has the potential to result in socioeconomic impacts that range from slight negative at present to negative in the long-term.

Current requirements would be modified under alternative 2 to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. Under any of the VMS trip declaration categories (i.e., Surfclam only, Quahog only, or Combined Surfclam/Quahog Trip), onboard sorting will be required to ensure tagged cages contain the clam species on the tag. The addition of another trip category would not be expected to be impactful from a VMS reporting perspective. Industry has already indicated they already do some level of voluntary sorting onboard the vessel when material travels down the conveyor belt on the deck prior to filling the cages, to remove items such as undesired clam species (current regulations already require 100% target species in each ITQ tagged cage), rocks, and debris to prevent those from going to the processor/dealer. Onboard operations may need to slow down for some fishing trips because of the need to slow the conveyor belt to allow better sorting of the clam species prior to placement in cages. As these vessels are already limited in terms of number of crew that can be carried on board, it is more likely that operations would slow versus the carriage of additional` crew to sort. As such this may slightly slow certain trips, to allow time for onboard sorting, and may result in increased operating costs for some trips. This will likely only impact some trips, not all vessel/processor groups, and it will depend on the extent to which vessels are fishing in beds with lots of surfclams and ocean quahogs co-occurring. However, alternative 2 could provide positive impacts as it would change current regulations and allow vessels to land mixed catches and allow them to operate more efficiently as requested by the industry. It also would allow for improved catch accounting needed to manage these ITQ fisheries, as both surfclam and quahog cages would need to be tagged accordingly. Alternative 2 is expected to have slight negative to slight positive impacts on the human communities when compared to current conditions, because of the potential for some operating costs increasing for some trips and vessel/processor groups and modification of current regulations that allows for mixed catches.

Under alternative 3, current requirements would be modified to create a new combined trip category that would allow for both species (surfclam/ocean quahog) to be landed on the same trip. However, on a declared combined trip (i.e., a fishing trip that is allowed to land both surfclams and ocean quahog) the mixing of both clam species within the cages would only be permitted with

the implementation of a new NOAA Fisheries port sampling program to assess catch composition. This enhanced monitoring for all combined trips would occur after the vessel returns to the dock (port). The creation of a new sampling program with sample sizes adequate to assess catch composition to support the stock assessment would be a costly endeavor. This program would require tracking vessels and intercepting them on arrival to port (at all hours) and dumping and refilling all or some of the cages. This would allow for accurate ITQ catch accounting for both surfclam and ocean quahog. through a carefully designed, representative sampling system. Port samplers would need to intercept vessels at the dock to process cage contents (labor intensive) and this may impact port operations. This would also require some level of personnel to complete the sampling and record the data. This type of program may greater than $200,000 annually. While this would be a NOAA implemented program, costs could be recovered from industry for the implementation of it. Alternative 3 is expected to negative impacts on the human communities when compared to current conditions, because of the new sampling program costs to be applied to the industry as whole. However, some slight positive impacts on the human communities are also expected when compared to current conditions, because of the modification of current regulations that allows for mixed catches and improvements to the catch composition data.

Alternative 4 would modify current requirements to create a new combined trip category would allow for both species (surfclam/ocean quahog) to be landed on the same trip. On a declared combined trip (i.e., a fishing trip that is allowed to land both surfclams and ocean quahog) the mixing of both clam species within the cages would be permitted with the implementation of a new onboard EM program to assess catch composition. This would allow for accurate ITQ catch accounting for both surfclam and ocean quahog. Existing electronic recording technology may be easily adapted to be applied to this fishery and 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, while reducing the need for length sampling by port samplers. While there could be long-term cost advantages to utilizing EM technology, and it may enhance industry adaptability to the clam mixing issue as the climate changes, there would be some short-term costs to development and implementation of such technologies. In addition, the technology has not been fully developed so this is a longer-term solution that might take several years to implement. It should be noted that technology development costs may be funded by other groups (those costs may not be imposed on the fishing industry) and likewise there may be incentives or offsets to reduce costs to deploy these types of approaches to the industry. While there may be costs associated with implementing EM technology borne by deploying the new technology to the industry (slight negative), the long-term benefits that could be realized through implementation may be slight positive.

When comparing all four alternatives for human communities, impacts are expected to range from negative to slight positive, compared to the current conditions. The magnitude of the negative impacts is expected to be greater under alterative 1 (i.e., slight negative to negative as a result of increased fishing operation costs and the degradation of catch data needed for management of these ITQ fisheries), followed by alternative 3 (i.e., negative due to costs of setting up new sampling program to slight positive), followed by alternative 4 (i.e., slight negative over the next few years as EM technology is developed and deployed, but slight positive longer term), and then, alternative 2 (i.e., slight negative to slight positive).

7.5 Cumulative Effects Analysis

The purpose of the 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. 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. The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed surfclam and ocean quahog fisheries.

A cumulative effects assessment makes effect determinations based on a combination of; 1) impacts from past, present, and reasonably foreseeable future actions; 2) the baseline conditions of the Valued Ecosystem Components (the combined effects from past, present, and reasonably foreseeable future actions plus the present condition of the VEC); and 3) impacts of the alternatives under consideration for this action.

7.5.1 Consideration of the Valued Ecosystem Component (VECs)

The VECS for the surfclam and ocean quahog fisheries are generally the "place" where the impacts of management actions occur and are identified in section 6.0 (Description of the Affected Environment).

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

The CEA identifies and characterizes the impacts on the VECs by the alternatives under consideration when analyzed in the context of other past, present, and reasonably foreseeable future actions.

7.5.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of 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 for surfclam and ocean quahog (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 surfclam and ocean quahog (section 6.4).

7.5.3 Temporal Boundaries

Overall, while the effects of the historical surfclam and ocean quahog fisheries are important and considered in the analysis, the temporal scope of past and present actions for surfclam and ocean quahog and non-target species and other fisheries, the physical environment and EFH, and human communities is primarily focused on actions that occurred after FMP implementation (1977 for surfclam and ocean quahog). For protected species, the scope of past and present actions is focused on the 1980s and 1990s (when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ) through the present.

The temporal scope of future actions for all VECs extends about five years (2027) into the future. The dynamic nature of resource management for these species and lack of information on projects that may occur in the future make it difficult to predict impacts beyond this timeframe with any certainty. The impacts discussed in this section are focused on the cumulative effects of the proposed action (i.e., the suite of preferred alternatives) in combination with the relevant past, present, and reasonably foreseeable future actions over these time scales.

7.5.4 Relevant Actions Other Than Those Proposed in this Document

7.5.4.1 Fishery Management Actions

7.5.4.1.1 Atlantic Surfclam and Ocean Quahog FMP Actions

Past, present, and reasonably foreseeable future actions for surfclam and ocean quahog management include the establishment of the original FMP, all subsequent amendments and frameworks, and the setting of annual specifications (ACLs and measures to constrain catch and harvest). Key actions are described below.

The FMP became effective in 1977 and included management and administrative measures to ensure effective management of the surfclam and ocean quahog resource. In 1998, Amendment 8 replaced the regulated fishing time system in the surfclam and ocean quahog fisheries with an ITQ system. These fisheries are managed under an ITQ system, and recently, NMFS implemented a data collection protocol process to collect information about quota share ownership and other forms of control of allocations that would enhance the management of these fisheries. Amendment 16 (2011) established ACLs and AMs consistent with the 2007 revisions to the Magnuson-Stevens Act. Related to this requirement, the Council annually implements or reviews catch and landings limits for each species consistent with the recommendations of the SSC, and reviews other management measures as necessary to prevent catch limits from being exceeded and to meet the objectives of the FMP. In addition, in 2016, Amendment 17 established a cost recovery program for the surfclam and ocean quahog ITQ fishery, as required by the Magnuson-Stevens Act; and the amendment also contained provisions to remove the optimum yield ranges and changed how biological reference points are incorporated into the FMP. The Council is awaiting rulemaking in 2022 on the Excessive Shares Amendment 20 to the FMP, which considered approaches to ensure that no individual, corporation, or other entity acquires an excessive share of the surfclam and ocean quahog ITQ privileges.

7.5.4.1.2 Other Fishery Management 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 7.5.3. 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.

For example, the NEFMC's omnibus habitat amendments revised EFH and habitat area of particular concern designations for NEFMC-managed species, revised or created habitat management areas, including gear restrictions to protect vulnerable habitat from fishing gear impacts, and established habitat research areas. These actions are expected to have overall positive impacts on habitat and EFH, with expected long-term positive implications for target and non-target species, while having mixed socioeconomic impacts on various user groups.

The MAFMC's omnibus forage amendment, implemented in 2017, established a commercial possession limit for over 50 forage species which were previously unmanaged in federal waters. This action is thought to have ongoing positive impacts to target, non-target, and protected species by protecting a forage base for these populations and limiting the expansion of any existing fishing effort on forage stocks.

The convening of take reduction teams for marine mammals over the temporal scope described in section 7.5.3 has had positive impacts for marine mammals via recommendations for management measures to reduce mortality and injury to marine mammals. These actions have had indirect positive impacts on target species, non-target species, and habitat as they have improved monitoring of fishing effort and reduced the amount of gear in the water. These measures have had indirect negative impacts on human communities through reduced fishery efficiency.

In the reasonably foreseeable future, the MAFMC and NEFMC are considering modifications to observer coverage requirements through an omnibus amendment that considers measures that would allow the Councils to implement industry-funded monitoring coverage in some FMPs above levels required by the Standard Bycatch Reporting Methodology in order to assess the amount and type of catch, monitor annual catch limits, and/or provide other information for management. This action could have long-term positive impacts on target species, non-target species, and protected species through improved monitoring and scientific data on these stocks. This could potentially result in negative socioeconomic impacts to commercial fishing vessels due to increased costs.

7.5.4.1.3 Fishery Management Action Summary

The Council has taken many actions to manage the associated commercial fishery. The MSA is the statutory basis for federal fisheries management. 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 promote positive effects on human communities in the long-term.

7.5.4.2 Non-Fishing Impacts

7.5.4.2.1 Other Human Activities

Non-fishing activities that occur in the marine nearshore and offshore environments and connected watersheds can cause the loss or degradation of habitat and/or affect the species that reside in those areas. The impacts of most nearshore human-induced non-fishing activities tend to be localized in the nearshore areas and marine project areas where they occur, although effects on species could be felt throughout their populations since many marine organisms are highly mobile. For offshore projects, some impacts may be localized while others may have regional influence, especially for larger projects. The following discussion of impacts is based on past assessments of activities and assume these activities will likely continue as projects are proposed.

Examples of these activities include point source and non-point source pollution, shipping, dredging/deepening, wind energy development, oil and gas development, construction, and other activities. Specific examples include at-sea disposal areas, oil and mineral resource exploration, aquaculture, construction of offshore windfarms, and bulk transportation of petrochemicals. Episodic storm events and the restoration activities that follow can also cause impacts. The impacts from these non-fishing activities primarily stem from habitat loss due to human interaction and alternation or natural disturbances. These activities are widespread and can have localized impacts on habitat related to accretion of sediments, pollutants, habitat conversion, and shifting currents and thermoclines. For protected species, primary concerns associated with non-fishing activities include vessel strikes, dredge interactions (especially for sea turtles and sturgeon), and underwater noise. These activities have both direct and indirect impacts on protected species. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and as such may indirectly constrain the productivity 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. Non-fishing activities can cause target, non-target, and protected species to shift their distributions away from preferred areas and may also lead to decreased reproductive ability and success (from current changes, spawning disruptions, and behavior changes), disrupted or modified food web interactions, and increased disease. While localized impacts may be larger in scale, the overall impact on the affected species and their habitats on a population level is unknown, but likely to have impacts that mostly range from no impact to slight negative impacts, depending on the species and activity.

Non-fishing activities permitted under other Federal agencies (e.g., beach nourishment, offshore wind facilities,) 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). NMFS and 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. Agencies need to respond to, but do not necessarily need to adopt these recommendations. Habitat conservation measure serves to

potentially minimize the extent and magnitude of indirect negative impacts federally-permitted activities could have on resources under NMFS' jurisdiction. In addition to guidelines mandated by the MSA, NMFS evaluates non-fishing effects during the review process required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by Federal, state, and local authority. Non-fishing activities must also meet the mandates under the ESA, specifically Section 7(a)(2),[6] which ensures that agency actions do not jeopardize the continued existence of endangered species and their critical habitat.

In recent years, offshore wind energy and oil and gas exploration have become more relevant in the Greater Atlantic region. They are expected to impact all VECs, as described below.

Impacts of Offshore Wind Energy Development on Biological Resources (Target Species, Non-target Species, Protected Species) and the Physical Environment

Construction activities may have both direct and indirect impacts on marine resources, ranging from temporary changes in distribution to injury and mortality. Impacts could occur from changes to habitat in the areas of wind turbines and cable corridors and increased vessel traffic to and from these areas. Species that reside in affected wind farms year-round may experience different impacts than species that seasonally reside in or migrate through these areas. Species that typically reside in areas where wind turbines are installed may return to the area and adapt to habitat changes after construction is complete. Inter-array and electricity export cables will generate electromagnetic fields, which can affect patterns of movement, spawning, and recruitment success for various species. Effects will depend on cable type, transmission capacity, burial depth, and proximity to other cables. Substantial structural changes in habitats associated with cables are not expected unless cables are left unburied (see below). However, the cable burial process may alter sediment composition along the corridor, thereby affecting infauna and emergent biota. Taormina et al. (2018) provide a recent review of various cable impacts, and Hutchison et al. (2020) and Taormina et al. (2020) examine the effects of electromagnetic fields in particular.

The full build out of offshore wind farms will result in broad habitat alteration. The wind turbines will alter hydrodynamics of the area, which may affect primary productivity and physically change the distribution of prey and larvae. It is not clear how these changes will affect the reproductive success of marine resources. Scour and sedimentation could have negative effects on egg masses that attach to the bottom. Benthic habitat will be altered due to the placement of scour protection at wind turbine foundations, and over cables that are not buried to target depth in the sediment, converting soft substrates into hard substrates. This could alter species composition and predator/prey relationships by increasing favorable habitat for some species and decreasing habitat for others. The placement of wind turbines will also establish new vertical structure in the water column, which could serve as reefs for bottom species, fish aggregating devices for pelagic species, and substrate for the colonization of other species, e.g., mussels. Various authors have studied

[6] Section 7(a)(2) estates, "each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat."

these types of effects (e.g., Bergström et al. 2013, Dannheim et al. 2019, Degraer et al. 2019, Langhamer 2012, Methratta and Dardick 2019, Stenberg et al. 2015).

Elevated levels of sound produced during site assessment activities, construction, and operation of offshore wind facilities will impact the soundscape.[7] Temporary, acute, noise impacts from construction activity could impact reproductive behavior and migration patterns; the long-term impact of operational noise from turbines may also affect behavior of fish and prey species, through both vibrations in the immediate area surrounding them in the water column, and through the foundation into the substrate. Depending on the sound frequency and source level, noise impacts to species may be direct or indirect (Finneran 2015, Finneran 2016, Nowacek et al. 2007, NRC 2000, NRC 2003, NRC 2005, Madsen et al. 2006, Piniak 2012, Popper et al. 2014, Richardson et al. 1995, Thomsen et al. 2006). Exposure to underwater noise can directly affect species via behavioral modification (avoidance, startle, spawning) or injury (sound exposure resulting in internal damage to hearing structures or internal organs) (Bailey et al. 2010, Bailey et al. 2014, Bergström et al. 2014, Ellison et al. 2011, Ellison et al. 2018, Forney et al. 2017, Madsen et al. 2006, Nowacek et al. 2007, NRC 2003, NRC 2005, Richardson et al. 1995, Romano et al. 2004, Slabbekoorn et al. 2010, Thomsen et al. 2006, Wright et al. 2007). Indirect effects are likely to result from changes to the acoustic environment of the species, which may affect the completion of essential life functions (e.g., migrating, breeding, communicating, resting, foraging)[8] (Forney et al. 2017, Richardson et al. 1995, Slabbekoorn et al. 2010, Thomsen et al. 2006).

Wind farm survey and construction activities and turbine/cable placement will substantially affect NMFS scientific research surveys, including stock assessment surveys for fisheries and protected species[9] and ecological monitoring surveys. Disruption of such scientific surveys could increase scientific uncertainty in survey results and may significantly affect NMFS' ability to monitor the health, status, and behavior of marine resources and protected species and their habitat use within this region. Based on existing regional Fishery Management Councils' ABC control rule processes and risk policies (e.g., 50 CFR §§ 648.20 and 21), increased assessment uncertainty could result in lower commercial quotas and recreational harvest limits that may reduce the likelihood of overharvesting and mitigate associated biological impacts on fish stocks. However, this would also result in lower associated fishing revenue and reduced recreational fishing opportunities, which could result in indirect negative impacts on fishing communities.

Impacts of Offshore Wind Energy Development on Socioeconomic Resources

One offshore wind pilot project off Virginia installed two turbines in 2020**.** Several potential offshore wind energy sites have been leased or identified for future wind energy development in federal waters from Massachusetts to North Carolina (see leasing map below – Figure 10). According to BOEM, approximately 22 gigawatts (close to 2,000 wind turbines based on current technology) of Atlantic offshore wind development via 17 projects are reasonably foreseeable along the east coast (BOEM 2020a). BOEM has recently begun a planning process for the Gulf of

[7] See NMFS Ocean Noise Strategy Roadmap: https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Roadmap_Final_Complete.pdf
[8] See NMFS Ocean Noise Strategy Roadmap: https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Roadmap_Final_Complete.pdf
[9] Changes in required flight altitudes due to proposed turbine height would affect aerial survey design and protocols (BOEM 2020a).

Maine via a regional intergovernmental renewable energy task force (https://www.boem.gov/Gulf-of-Maine). It is not clear at this time where development might occur in the Gulf of Maine. Given the water depth in the region, floating turbines will likely be the primary type of wind turbine foundations to be deployed in the area. As the number of wind farms increases, so too would the level and scope of impacts to affected habitats, marine resources, and human communities.

Offshore wind energy development is being considered in parts of the outer continental shelf that overlap with the distribution of surfclam – particularly, the inner and mid-shelf of the Middle Atlantic Bight. Offshore wind energy leasing could make the surfclam fishery vulnerable to exclusion and effort displacement as development expands in the region. The large vessels with hydraulic dredges may make fishing for surfclam in and around wind farm infrastructure highly uncertain. While no offshore wind developers have expressed an intent to exclude fishing vessels from wind turbine arrays once construction is complete, it could be difficult for operators to tow bottom-tending mobile gear or transit amongst the wind turbines, depending on the spacing and orientation of the array and weather conditions.[10] If vessel operators choose to avoid fishing or transiting within wind farms, effort displacement and additional steaming time could result in negative socioeconomic impacts to affected communities, including user conflicts, decreased catch and associated revenue, safety concerns, and increased fuel costs. If vessels elect to fish within wind farms effects could be negative due to reduced catch and associated revenue, user conflicts, and increased risk of allision and collision. There could also be social and economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generated using fossil fuels with renewable sources (AWEA 2020).

Impacts of Oil and Gas Development on Biological and Socioeconomic Resources

For oil and gas, this timeframe could include leasing and possible surveys, depending on the direction of BOEM's 5-year planning process in the North and Mid-Atlantic regions. (Note that there are fewer oil and gas development activities in the region than offshore wind; therefore, the non-fishing impacts focus more heavily on offshore wind.) Seismic surveys to detect and quantify mineral resources in the seabed impact marine species and the acoustic environment within which marine species live. These surveys have uncertain impacts on fish behaviors that could cumulatively lead to negative population level impacts. For protected species (sea turtle, fish, small cetacean, pinniped, large whale), the severity of these behavioral or physiological impacts is based on the species' hearing threshold, the overlap of this threshold with the frequencies emitted by the survey, as well as the duration of time the surveys would operate, as these factors influence exposure rate (Ellison et al. 2011, Ellison et al. 2018, Finneran 2015, Finneran 2016, Madsen et al. 2006, Nelms et al. 2016, Nowacek et al. 2007, Nowacek et al. 2015, NRC 2000, NRC 2003, NRC 2005, Piniak 2012, Popper et al. 2014, Richardson et al. 1995, Thomsen et al. 2006, Weilgart 2018). If fishery resources are affected by seismic surveys, then so in turn the fishermen targeting these resources would be affected. However, such surveys could increase jobs, which may provide some positive effects on human communities (BOEM 2020b). It is important to understand that seismic surveys for mineral resources are different

[10] The United States Coast Guard has considered transit and safety issues related to the Massachusetts and Rhode Island lease areas in a recent port access route study and has recommended uniform 1 mile spacing in east-west and north-south directions between turbines to facilitate access for fishing, transit, and search and rescue operations. Future studies in other regions could result in different spacing recommendations (USCG 2020).

from surveys used to characterize submarine geology for offshore wind installations, and thus these two types of activities are expected to have different impacts on marine species.

Offshore Energy Summary

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats on a population is unknown, but will likely range from no impact to moderate negative, depending on the number and locations of projects that occur. The individual project phases (site assessment, construction, operation, and decommissioning) as well as different aspects of the technology (foundations, cables/pipelines, turbines) will have varying impacts on resources. Mitigation efforts, such as habitat conservation measures, time of year construction restrictions, layout modifications, and fishery compensation funds could lessen the magnitude of negative impacts as well. The overall impact on socioeconomic resources is likely slightly positive to moderate negative; potentially positive due to a potentially increase in jobs and recreational fishing opportunities, but negative due to displacement and disruption of commercial fishing effort.

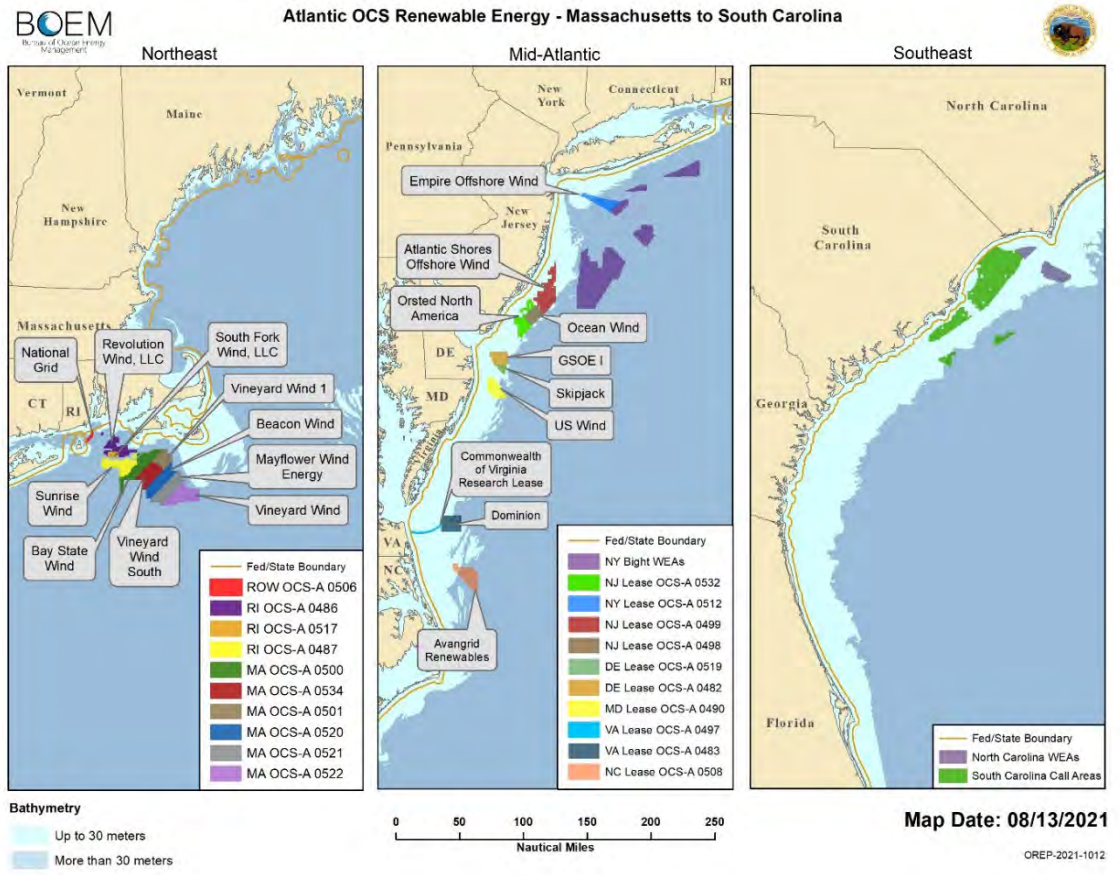

Figure 10. Map of BOEM Wind Planning areas, Wind Energy Areas, and Wind Leasing Areas on the Atlantic Outer Continental Shelf. Source:

https://www.boem.gov/sites/default/files/uploadedImages/BOEM/Renewable_Energy_Program/Mapping_and_Data/ocs_wpa.jpg

7.5.4.2.2 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. The rate of physical and chemical changes in marine ecosystems have been most rapid in recent decades (Johnson et al. 2019). 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). The general trend of changes can be explained by warming causing increased ocean stratification, which reduces primary production, lowering energy supply for higher trophic levels and changing metabolic rates. Different responses to warming can lead to altered food-web structures and ecosystem-level changes. Shifts in spatial distribution are generally to higher latitudes (i.e., poleward) and to deeper waters as species seek cooler waters within their normal temperature preferences. Climate change will also potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors. Survival of marine resources under a changing climate depends on their ability to adapt to change, but also how and to what degree those other human activities influence their natural adaptive capacity.

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).[11]

This assessment determined that surfclam 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.

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 quahog usually occur at depts between 25-61 m and temperature regulates the

[11] Climate vulnerability profiles for individual species are available at https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index

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).[12]

Overall climate vulnerability results for additional Greater Atlantic species, including some of the non-target species identified in this action, are shown in Figure 11 (Hare et al. 2016). While the effects of climate change may benefit some habitats and the populations of species through increased availability of food and nutrients, reduced energetic costs, or decreased competition and predation, a shift in environmental conditions outsider the normal range can result in negative impacts for those habitats and species unable to adapt. That, in turn, may lead to higher mortality, reduced growth, smaller size, and reduced reproduction or populations. Thus, already stressed populations are expected to be less resilient and more vulnerable to climate impacts. Climate change is expected to have impacts that range from positive to negative depending on the species. However, future mitigation and adaptation strategies may mitigate some of these impacts. The science of predicting, evaluating, monitoring, and categorizing these changes continues to evolve. The social and economic impacts of climate change will depend on stakeholder and community dependence on the fisheries, and their capacity to adapt to change. Commercial and recreational fisheries may adapt in different ways, and methods of adaptation will differ among regions. In addition to added scientific uncertainty, climate change will introduce implementation uncertainty and other challenges to effective conservation and management (MAFMC 2014).

[12] Climate vulnerability profiles for individual species are available at: https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index

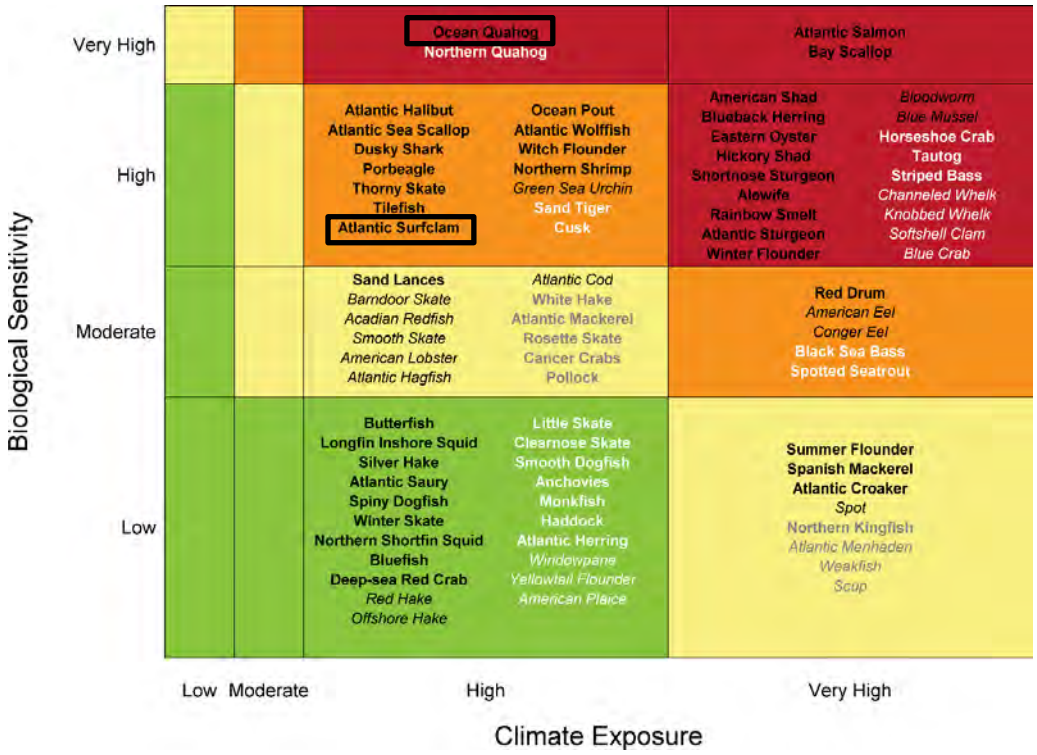

Figure 11. Overall climate vulnerability score for Greater Atlantic species, with surfclam and ocean quahog highlighted with black boxes. Overall climate vulnerability is denoted by color: low (green), moderate (yellow), high (orange), and very high (red). Certainty in score is denoted by text font and text color: very high certainty (> 95%, black, bold font), high certainty (90–95%, black, italic font), moderate certainty (66–90%, white or gray, bold font), low certainty (< 66%, white or gray, italic font) (Hare et al. 2016).

7.5.5 Baseline Condition for the Resources, Ecosystems, and Human Communities

For the purposes of this CEA, the baseline condition is considered as the present condition of the VECs plus the combined effects of the past, present, and reasonably foreseeable future actions.

Table 12 summarizes the added effects of the condition of the VECs (i.e., status/trends/stresses from affected environment and impacts) and the sum effect of the past, present, and reasonably foreseeable future actions (from previous summary table or past, present, reasonably foreseeable future action section above). The resulting CEA baseline for each VEC is exhibited in the last column of Table 12. As mentioned above, the CEA baseline is then used to assess cumulative effects of the proposed management actions.

Table 12. Summary of the current status; combined effects of Past, Present, and Reasonably foreseeable future actions; and the combined baseline condition of each VEC.

VEC	Status and Trends	Combined Effects of Past, Present, and Reasonably Foreseeable Future Actions	Combined CEA Baseline Conditions
Managed Resource	Atlantic surfclam and ocean quahog are not overfished nor is overfishing occurring	To be completed later once a preferred alternative has been selected.	
Non-target Species	Non-targets that are managed are not overfished or overfishing. Moon snail is unassessed therefore the status is unknown (section 6.1). Highly directed fishery, with low rates of non-targets relative to target species		
Habitat	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	Leatherback and Kemp's ridley sea turtles are classified as endangered under the ESA; loggerhead (Northwest Atlantic Ocean DPS) and green (North Atlantic DPS) sea turtles are classified as threatened. All large whales in the Northwest Atlantic are protected under the MMPA. Of these large whales, North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. Small cetaceans and pinnipeds: protected under MMPA Atlantic salmon (Gulf of Maine DPS): threatened under ESA Atlantic sturgeon: New York Bight, Chesapeake, Carolina, and South Atlantic DPSs are endangered under ESA; Gulf of Maine DPS is listed as threatened under the ESA; Giant manta ray and Oceanic whitetip sharks are threatened under the ESA.		

Human Communities	Surfclam and ocean quahog stocks support substantial industrial fisheries and related support services. 2021 estimated ex-vessel revenues were $24 and $18 million for surfclam and ocean quahog, respectively. Most of the fleet is currently fishing out of Pt. Pleasant and Atlantic City, NJ, Oceanview, NY, and New Bedford and Fairhaven, MA. Hyannis, MA (surfclam only) landings have been recently reduced over the last few months. Cape Charles, VA is a revived port of landings targeting surclams off the Virginia coast. The small scale Maine fishery is entirely for ocean quahog, which are sold as shellstock for the half-shell market. The other fisheries are industrialized ones for surfclam and ocean quahog, which are hand shucked or steam-shucked and processed into fried, canned, and frozen products. In 2021, there were 63 surfclam and 31 ocean quahog allocations owners at the beginning of the fishing year. A total of 53 vessels were active in these fisheries in 2021, including a handful of independent vessels (less than 5).	

7.5.6 Summary of the Effects of the Proposed Actions

[To be completed later once a preferred alternative has been selected]

7.5.7 Magnitude and Significance of Cumulative Effects

[To be completed later once a preferred alternative has been selected]

7.5.7.1 Magnitude and Significance of Cumulative Effects on Managed Species and Non-Target Species

[To be completed later once a preferred alternative has been selected]

7.5.7.2 Magnitude and Significance of Cumulative Effects on Habitat

[To be completed later once a preferred alternative has been selected]

7.5.7.3 Magnitude and Significance of Cumulative Effects on Protected Species

[To be completed later once a preferred alternative has been selected]

7.5.7.4 Magnitude and Significance of Cumulative Effects on Human Communities

[To be completed later once a preferred alternative has been selected]

7.5.8 Preferred Action on all the VECs

[To be completed later once a preferred alternative has been selected]

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 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 surfclam and ocean quahog, and the U.S. fishing industry. To achieve OY, both scientific and management uncertainty are addressed when establishing catch limits. The Council developed recommendations that do not exceed the ABC recommendations of the SSC, which explicitly address scientific uncertainty. The Council considered management uncertainty and other social, economic, and ecological factors, when recommending ACTs. The Council uses the best scientific information available (National Standard 2) and manages surfclam and ocean quahog throughout their range (National Standard 3). These management measures do not discriminate among residents of different states (National Standard 4) and they do not have economic allocation as their sole purpose (National Standard 5). The measures account for variations in the fisheries (National Standard 6) and 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). The proposed actions are consistent with National Standard 9, which addresses bycatch in fisheries. NOAA Fisheries has implemented many regulations that have indirectly reduced 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 managed species, the ports and communities that depend on these fisheries, and the Nation as a whole.

8.2 NEPA FINDING OF NO SIGNIFICANT IMPACT (FONSI)

[To be completed by NMFS]

8.3 Endangered Species Act

Sections 6.3 and 7 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 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 in any manner not considered in previous consultations on the fisheries.

8.5 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring the 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 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 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 Council held a number of public meetings during the development of a white paper and the amendment development process on this issue.

- Fishery Management Act Team Meeting: November 16, 2021
- Joint Surfclam and Ocean Quahog Committee and Advisory Panel Meeting: December 6, 2021
- Council Meeting: December 15, 2021
- Fishery Management Act Team Meeting: April 26, 2022

The public will also have the opportunity to comment on this issue during public hearings. Three public hearings will be conducted in New Bedford, MA, Philadelphia, PA, and an online only webinar. This will be followed by a Council meeting in December 2022 to review comments and consider action on this issue.

If the Council submits the amendment to NOAA Fisheries, the public will have further opportunity to comment on this amendment and the proposed management measures once 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 that ensure that no individual, corporation, or other entity acquires an excessive share of the surfclam and ocean quahog ITQ privileges. This action also revises the process for specifying multi-year management measures, and requires periodic review of the excessive shares measures, and to allow adjustments to the made under the frameworkable provisions of the FMP. In addition, this amendment revises the 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 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 (section 8.6). In addition, the public will have further opportunity to comment on this amendment 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 Other/Discussion types of documents (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. 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 (section 7.0). The specialists who worked with these core data sets and other information 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 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 staff technical experts and public meetings at which affected stakeholders will 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 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 Executive Order 12898 (Environmental Justice)

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations provides guidelines to ensure that potential impacts on these populations are identified and mitigated, and that these populations can participate effectively in the NEPA process (EO 12898 1994). The NOAA NAO 216-6, at Section 7.02, states that "consideration of E.O. 12898 should be specifically included in the NEPA documents for decision-making purposes." Agencies should also encourage public participation, especially by affected communities, during scoping, as part of a broader strategy to address environmental justice issues. Minority and low-income individuals or populations must not be excluded from participation in, denied the benefits of, or subjected to discrimination because of their race, color, or national origin. Although the impacts of this action may affect communities with environmental justice concerns, the proposed actions should not have disproportionately high effects on low income or minority populations. The proposed actions would apply to all participants in the affected area, regardless of minority status or income level.

8.11 Initial Regulatory Flexibility Act and Regulatory Impact Review

This section provides analysis to address the requirements of Executive Order 12866 (Regulatory Planning and Review) and the Regulatory Flexibility Act. These two mandates are addressed together as many of their requirements are duplicative. In addition, many of their requirements duplicate those

of the MSA and/or NEPA; therefore, this section contains several references to previous sections of this document.

8.11.1 Basis and Purpose of the Rule and Summary of Preferred Alternatives

[To be completed later once a preferred alternative has been selected]

8.11.2 Initial Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA), first enacted in 1980, and codified at 5 U.S.C. 600-611, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: 1) to increase agency awareness and understanding of the impact of their regulations on small business; 2) to require that agencies communicate and explain their findings to the public; and 3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The Regulatory Flexibility Act emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities, as well as consideration of alternatives that may minimize negative impacts to small entities, while still achieving the objective of the action (section 8.10.4). When an agency publishes a proposed rule, it must either, (1) certify that the action will not have a significant adverse impact on a substantial number of small entities, and support such a certification with a factual basis demonstrating this outcome, or (2) if such a certification cannot be supported by a factual basis, prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities.

[To be completed later once a preferred alternative has been selected]

8.11.2.1 Description and Number of Entities to Which the Rule Applies

[To be completed later once a preferred alternative has been selected]

8.11.2.2 Economic Impacts on Regulated Entities

[To be completed later once a preferred alternative has been selected]

8.11.3 Regulatory Impact Review

Executive Order 12866 requires a Regulatory Impact Review (RIR) in order to enhance planning and coordination with respect to new and existing regulations. This Executive Order requires the Office of Management and Budget (OMB) to review regulatory programs that are considered to be "significant." The analysis included in this RIR further demonstrates that this action is not a "significant regulatory action" because it will not affect in a material way the economy or a sector of

the economy.

Executive Order 12866 requires a review of proposed regulations to determine whether or not the expected effects would be significant, where a significant regulatory action is one that may:

- Have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or,
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The surfclam fishery was worth between $23 million and $28 million from 2019-2021 (ex-vessel revenues). The ocean quahog fishery was worth between $16 million and $19 million during the same period.

[To be completed later once a preferred alternative has been selected]

8.11.4 Analysis of Non-Preferred Alternatives

When considering the economic impacts of the alternatives under the Regulatory Flexibility Act and Executive Order 12866, consideration should also be given to those non-preferred alternatives which would result in higher net benefits or lower costs to small entities while still achieving the stated objective of the action.

[To be completed later once a preferred alternative has been selected]

9.0 LITERATURE CITED

AWEA (American Wind Energy Association). 2020. U.S. Offshore Wind Power Economic Impact Assessment.https://supportoffshorewind.org/wp-content/uploads/sites/6/2020/03/AWEA_Offshore-Wind-Economic-ImpactsV3.pdf. 19 p.

Bailey, H., K.L. Brookes, and P.M. Thompson. 2014. Assessing environmental impacts of offshore wind farms: lessons learned and recommendations for the future. *Aquatic Biosystems* 10(8): 1-13.

Bailey, H., B. Senior, D. Simmons, J. Rusin, G. Picken, and P.M. Thompson. 2010. Assessing underwater noise levels during pile-driving at an offshore windfarm and its potential effects on marine mammals. *Marine Pollution Bulletin* 60: 888–897.

Baumgartner, M.F., C.A. Mayo, and R.D. Kenney 2007. Enormous carnivores, microscopic food, and a restaurant that's hard to find. In "The Urban Whale: North Atlantic Right Whales at the Crossroads" (S.D. Kraus and R.M. Rolland, eds.), pp. 138–171 . Harvard University Press, Cambridge, MA.

Bergström, L., L. Kautsky, T. Malm, R. Rosenberg, M. Wahlberg, N.Å. Capetillo, and D. Wilhelmsson. 2014. Effects of offshore wind farms on marine wildlife—a generalized impact assessment. *Environmental Research Letters* 9(3): 1-12.

Bergström, L., F. Sundqvist, and U. Bergström. 2013. Effects of an offshore wind farm on temporal and spatial patterns in the demersal fish community. *Marine Ecology Progress Series* 485: 199-210.

Bureau of Ocean and Energy Management (BOEM). 2020a. *Vineyard Wind 1 Offshore Wind Energy Project Supplement to the Draft Environmental Impact Statement.* Appendix A.

Bureau of Ocean and Energy Management (BOEM). 2020b. *Oil and Gas Energy Fact Sheet*. https://www.boem.gov/sites/default/files/documents/oil-gas-energy/BOEM_FactSheet-Oil%26amp%3BGas-2-26-2020.pdf. 2 pp.

Cargnelli L.M., S.J. Griesbach, D.B. Packer, and E. Weissberger. 1999a. Essential Fish Habitat Source Document: Atlantic surfclam, *Spisula solidissima*, Life History and Habitat Characteristics. NOAA Tech Memo NMFS NE 142; 13 p.

Cargnelli L.M., S.J. Griesbach, D.B. Packer, and E. Weissberger. 1999b. Essential Fish Habitat Source Document: Ocean Quahog, *Arctica islandica*, Life History and Habitat Characteristics. NOAA Tech Memo NMFS NE 148; 20 p.

Chute, T. Personal Communication. November 15, 2017. NMFS, Northeast Fisheries Science Center, 166 Water St., Woods Hole, MA 02543.

Davis, C.S. 1987 Zooplankton life cycles "In: Backus, R.H., Bourne, D.W. (Eds.), Georges Bank. MIT Press, Cambridge, MA" pp. 254-267.

Dannheim, J., L. Bergström, S.N.R. Birchenough, R. Brzana, A.R. Boon, J.W.P. Coolen, J.-C. Dauvin, I. De Mesel, J. Derweduwen, A.B. Gill, Z.L. Hutchison, A.C. Jackson, U. Janas, G. Martin, A. Raoux, J. Reubens, L. Rostin, J. Vanaverbeke, T.A. Wilding, D. Wilhelmsson, S. Degraer, and J. Norkko. 2019. Benthic effects of offshore renewables: identification of knowledge gaps and urgently needed research. *ICES Journal of Marine Science.*

Degraer, S., R. Brabant, B. Rumes, and L. Vigin. 2019. Environmental Impacts of Offshore Wind Farms in the Belgian Part of the North Sea: Marking a Decade of Monitoring, Research, and Innovation. Memoirs on the Marine Environment, Royal Belgian Institute of Natural Sciences, OD Natural Environment, Marine Ecology and Management: 134.

Ellison, W.T., B.L. Southall, C.W. Clark, and A.S. Frankel. 2011. A new context-based approach to assess marine mammal behavioral responses to anthropogenic sounds. *Conservation Biology* 26: 21-28.

Ellison, W.T., B.L. Southall, A.S. Frankel, K. Vigness-Raposa, and C.W. Clark. 2018. Short Note: An Acoustic Scene Perspective on Spatial, Temporal, and Spectral Aspects of Marine Mammal Behavioral Responses to Noise. *Aquatic Mammals* 44(3): 239-243.

Finneran, J.J. 2015. Noise-induced hearing loss in marine mammals: a review of temporary threshold shift studies from 1996 to 2015. *J. Acoust. Soc. Am.* 138, 1702–1726. doi: 10.1121/1.4927418

Finneran, J.J. 2016. Auditory Weighting Functions and TTS/PTS Exposure Functions for Marine Mammals Exposed to Underwater Noise, Technical Report 3026, December 2016. San Diego: Systems Center Pacific.

Forney, K.A., B.L. Southall, E. Slooten, S. Dawson, A.J. Read, R.W. Baird, and R.L. Brownell Jr. 2017. Nowhere to go: noise impact assessments for marine mammal populations with high site fidelity. *Endang. Species. Res.* 32: 391–413.

Gaichas, S., J. Hare, M. Pinsky, G. DePiper, O. Jensen, T. Lederhouse, J. Link, D. Lipton, R. Seagraves, J. Manderson, and M. Clark. 2015. Climate change and variability: a white paper to inform the Mid-Atlantic Fishery Management Council on the impact of climate change on fishery science and management. Second draft. http://www.mafmc.org/eafm/

Greene, J.K., M.G. Anderson, J. Odell, and N. Steinberg, eds. 2010. The Northwest Atlantic Marine Ecoregional Assessment: Species, Habitats and Ecosystems. Phase One. The Nature Conservancy, Eastern U.S. Division, Boston, MA. www.conservationgateway.org

Hare, J.A., W.E. Morrison, M.W. Nelson, M.M. Stachura, E.J. Teeters, R.B. Griffis, et al. 2016. A Vulnerability Assessment of Fish and Invertebrates to Climate Change on the Northeast U.S. Continental Shelf. PLoS ONE 11(2).
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0146756

Hennen, Dan. Personal Communication. June 14, 2020. NOAA Fisheries, Northeast Fisheries Science Center, 166 Water St., Woods Hole, MA 02543.

Hennen, Dan. Personal Communication. March 30, 2022. NOAA Fisheries, Northeast Fisheries Science Center, 166 Water St., Woods Hole, MA 02543.

Hutchison, Z.L., A.B. Gill, P. Sigray, H. He, and J.W. King. 2020. Anthropogenic Electromagnetic Fields (EMF) Influence the Behaviour of Bottom-Dwelling Marine Species. Scientific Reports 10 (1): 4219.

Johnson, M.R., C. Boelke, L.A. Chiarella, and K. Greene. 2019. Guidance for Integrating Climate Change Information in Greater Atlantic Region Habitat Conservation Division Consultation Processes. Greater Atlantic Region Policy Series 19-01. 235 p. https://www.greateratlantic.fisheries.noaa.gov/policyseries/index.php/GARPS/article/view/3

Johnson, C., J. Pringle, and C. Chen. 2006. Transport and retention of dormant copepods in the Gulf of Maine. Deep-Sea Research II. 53: 2520–2536.

Langhamer, O. 2012. Artificial Reef Effect in relation to Offshore Renewable Energy Conversion: State of the Art. *The Scientific World Journal*: 8.

Lynch, D.R., W.C. Gentleman, D.J. McGillicuddy, and C.S. Davis. 1998. Biological/ physical simulations of *Calanus finmarchicus* population dynamics in the Gulf of Maine. Marine Ecology Progress Series. 169: 189-210.

Lucey, S.M. and J.A. Nye. 2010. Shifting species assemblages in the northeast U.S. continental shelf large marine ecosystem. *Marine Ecology Progress Series*. 415: 23-33.

Madsen, P.T., M. Wahlberg, J. Tougaard, K. Lucke, and P. Tyack. 2006. Wind turbine underwater noise and marine mammals: implications of current knowledge and data needs. *Mar. Ecol. Prog. Ser.* 309: 279–295.

MAFMC (Mid-Atlantic Fishery Management Council). 1988. Amendment #8 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan. Dover, DE. 142 p. + append.

MAFMC (Mid-Atlantic Fishery Management Council). 2003. Amendment 13 to the Atlantic Surfclam and Ocean Quahog Fishery Management Plan. Dover, DE. 344 p. + append.

MAFMC (Mid-Atlantic Fishery Management Council). 2014. Workshop Report: East Coast Climate Change and Fisheries Governance Workshop. March 19-21, 2014, Washington, DC.

MAFMC (Mid-Atlantic Fishery Management Council). 2022a. Atlantic Surfclam Information Document - April 2018. Dover, DE. 15 p.

MAFMC (Mid-Atlantic Fishery Management Council). 2022b. Ocean Quahog Information Document - April 2018. Dover, DE. 15 p.

Meise, C.J. and J.E. O'Reilly. 1996. Spatial and seasonal patterns in abundance and age-composition of *Calanus finmarchicus* in the Gulf of Maine and on Georges Bank: 1977- 1987. Deep Sea Research II. 43(7-8):1473-1501.

Methratta, E. and W. Dardick (2019). Meta-Analysis of Finfish Abundance at Offshore Wind Farms. *Reviews in Fisheries Science and Aquaculture* 27(2): 242-260.

National Research Council (NRC). 2000. Marine Mammals and Low-Frequency Sound: Progress Since 1994. Washington, DC: National Academies Press.

National Research Council (NRC). 2003. Ocean Noise and Marine Mammals. Washington, DC: National Academies Press.

National Research Council (NRC). 2005. Marine Mammal Populations and Ocean Noise: Determining When Noise Causes Biologically Significant Effects. Washington, DC: National Academies Press.

Northern Economics, Inc. 2019. Review of the Atlantic Surfclam and Ocean Quahog Individual Transferable Quota Program. Prepared for Mid-Atlantic Fishery Management Council. http://www.mafmc.org/council-events/june-2019-council-meeting; "Briefing Materials (Tab 3)."

NEFSC (Northeast Fisheries Science Center). 2017a. 61st Northeast Regional Stock Assessment Workshop (61st SAW) Assessment Summary Report. U.S. Dept Commer, Northeast Fish Sci Cent Ref Doc. 16-13; 26 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026. http://www.nefsc.noaa.gov/publications

NEFSC (Northeast Fisheries Science Center). 2017b. 63rd Northeast Regional Stock Assessment Workshop (63rd SAW) Assessment Summary Report. U.S. Dept Commer, Northeast Fish Sci Cent Ref Doc. 17-09; 28 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026. http://www.nefsc.noaa.gov/publications

Nelms, S.E., W.E. Piniak, C.R. Weir, and B.J. Godley. 2016. Seismic surveys and marine turtles: an underestimated global threat? *Biol. Conserv.* 193, 49–65. doi: 10.1016/j.biocon.2015.10.020

NMFS (National Marine Fisheries Service). 2009. Excessive Share Issues in the Surfclam and Ocean Quahog ITQ Fishery. Northeast Fisheries Science Center. Woods Hole, MA, 28 p.

NMFS (National Marine Fisheries Service). 2012. Re-opening a portion of the Georges Bank closed area to surfclam and ocean quahog harvesting, Environmental Assessment and Regulatory Impact Review. NOAA/NMFS Northeast Regional Office, Gloucester MA, 103 p.

NMFS (National Marine Fisheries Service). 2013. Re-opening a portion of the Georges Bank closed area to surfclam and ocean quahog harvesting, Supplemental Environmental Assessment and Regulatory Impact Review. NOAA/NMFS Northeast Regional Office, Gloucester MA, 34 p.

NMFS (National Marine Fisheries Service). 2015a. Endangered Species Act Section 4(b)(2) Report: Critical Habitat for the North Atlantic Right Whale (*Eubalaena glacialis*). Prepared by National Marine Fisheries Service Greater Atlantic Regional Fisheries Office and Southeast Regional Office, December 2015.
http://www.greateratlantic.fisheries.noaa.gov/regs/2016/January/16narwchsection4_b__2_report012616.pdf

NMFS (National Marine Fisheries Service). 2015b. North Atlantic Right Whale (*Eubalaena glacialis*). Source Document for the Critical Habitat Designation: A review of information pertaining to the definition of "critical habitat" Prepared by National Marine Fisheries Service Greater Atlantic Regional Fisheries Office and Southeast Regional Office, July 2015.

NMFS (National Marine Fisheries Service). 2017a. North Atlantic right whale 5-year review. Summary and evaluation. Prepared by the National Marine Fisheries Service, Greater Atlantic Regional Fisheries Office Gloucester, Massachusetts, October 2017. https://www.greateratlantic.fisheries.noaa.gov/protected/final_narw_5-year_review_2017.pdf

NMFS (National Marine Fisheries Service). 2021. Endangered Species Act Section 7 Consultation on the: (a) Authorization of the American Lobster, Atlantic Bluefish, Atlantic, Deep-Sea Red Crab, Mackerel/Squid/Butterfish, Monkfish, Northeast Multispecies, Northeast Skate Complex, Spiny Dogfish, Summer Flounder/Scup/Black Sea Bass, and Jonah Crab Fisheries and (b) Implementation of the New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment 2. National Marine Fisheries Service, Greater Atlantic Regional Fisheries Office, Gloucester, Massachusetts; May 2021.

NMFS (National Marine Fisheries Service) and USFWS (United States Fish and Wildlife Service). 2015. Kemp's Ridley Sea Turtle (*Lepidochelys kempii*) 5-year Review: Summary and Evaluation. National Marine Fisheries Service and United States Fish and Wildlife Service, Silver Spring, Maryland.

NOAA (National Oceanic and Atmospheric Administration). 2016. Species in the Spotlight Priority Actions: 2016-2020 Atlantic Salmon (*Salmo salar*). Atlantic Salmon Five Year Action Plan.

Northwest Atlantic Leatherback Working Group. 2018. Northwest Atlantic Leatherback Turtle (*Dermochelys coriacea*) Status Assessment (Bryan Wallace and Karen Eckert, Compilers and Editors). Conservation Science Partners and the Wider Caribbean Sea Turtle Conservation Network (WIDECAST). WIDECAST Technical Report No. 16. Godfrey, Illinois. 36 p.

Northeast Region Essential Fish Habitat Steering Committee. 2002. Workshop on the Effects of Fishing Gear on Marine Habitats off the Northeastern United States, October 23-25, 2001, Boston, Massachusetts. Northeast Fisheries Science Center Reference Document 02-01; 86 p. http://www.nefsc.noaa.gov/nefsc/publications/crd/crd0201/

Nowacek, D.P., L.H. Thorne, D.W. Johnston, and P.L. Tyack. 2007. Responses of cetaceans to anthropogenic noise. *Mamm. Rev.* 37, 81–115. doi: 10.1111/j.1365-2907.2007.00104.x

Nowacek, D.P., C.W. Clark, D. Mann, P. JO. Miller, H.C. Rosenbaum, J.S. Golden, M. Jasny, J. Kraska, and B.L. Southall. 2015. Marine seismic surveys and ocean noise: time for coordinated and prudent planning. *Front. Ecol. Environ*. 13(7): 378–386. doi:10.1890/130286

Nye, J.A., T.M. Joyce, Y.O. Kwon, and J.S. Link. 2011. Silver hake tracks changes in Northwest Atlantic circulation. *Nature Communications*. 2:412.

Palmer, D. 2017. Developing the Protected Resources Affected Environment for Environmental Assessments and Environmental Impact Statements. Greater Atlantic Region Policy Series 17-01. NMFS Greater Atlantic Regional Fisheries Office. 74 p.
www.greateratlantic.fisheries.noaa.gov/policyseries/

Piniak, W.E.D. 2012. *Acoustic Ecology of Sea Turtles: Implications for Conservation*. Ph.D., Duke University.

Pinsky, M.L., B. Worm, M.J. Fogarty, J.L. Sarmiento, and S.A. Levin. 2013. Marine taxa track local climate velocities. *Science*. 341(6151): 1239-1242.

Popper, A., A. Hawkins, R. Fay, R. Mann, D. Bartol, S.T. Carlson, et al. 2014. Sound exposure guidelines for fishes and sea turtles: a technical report prepared by ANSI-accredited standards committee S3/SC1 and registered with ANSI. *ASA S3/SC1* 4.

Richardson, W.J., C.R. Greene, Jr., C.I. Malme, and D.H. Thomson. 1995. *Marine Mammals and Noise*. San Diego, CA: Academic Press.

Romano, T., M. Keogh, C. Kelly, P. Feng, L. Berk, C. Schlundt, et al. 2004. Anthropogenic sound and marine mammal health: measures of the nervous and immune systems before and after intense sound exposure. *Can. J. Fish. Aquat. Sci.* 61, 1124–1134. doi: 10.1139/f04-055

Seminoff, J.A., C.D. Allen, G.H. Balazs, P.H. Dutton, T. Eguchi, H.L. Hass, S.A. Hargrove, M. Jensen, D.L. Klemm, A.M. Lauritsen, S.L. MacPherson, P. Opay, E.E. Possardt, S. Pultz, E. Seney, K.S. Van Houtan, and R.S. Waples. 2015. Status review of the Green Turtle (Chelonia mydas) under the Endangered Species Act. NOAA Tech. Memo. NOAATM-NFMS-SWFSC-539, NMFS Southwest Fisheries Science Center, Miami, Florida.

Slabbekoorn, H., N. Bouton, I. van Opzeeland, A. Coers, C. ten Cate, and A.N. Popper. 2010. A noisy spring: the impact of globally rising underwater sound levels on fish. *Trends Ecol. Evol. (Amst).* 25, 419–427. doi: 10.1016/j.tree.2010.04.005

Steimle, F.W. and C. Zetlin. 2000. Reef habitats in the middle Atlantic bight: abundance, distribution, associated biological communities, and fishery resource use. *Marine Fisheries Review*. 62: 24-42.

Stenberg, C., J.G. Støttrup, M. van Deurs, C.W. Berg, G.E. Dinesen, H. Mosegaard, T.M. Grome, and S.B. Leonhard. 2015. Long-term effects of an offshore wind farm in the North Sea on fish communities. *Marine Ecology Progress Series* 528: 257-265.

Stenseth, N.C., A. Mysterud, G. Otterson, J.W. Hurrell, K. Chan, and M. Lima. 2002 Ecological Effects of Climate Fluctuations. *Science*. 297(5585); 1292-1296.

Stevenson D., L. Chiarella, D. Stephan, R. Reid, K. Wilhelm, J. McCarthy, and M. Pentony. 2004. Characterization of the fishing practices and marine benthic ecosystems of the Northeast U.S. shelf, and an evaluation of the potential effects of fishing on essential fish habitat. Woods Hole (MA): National Marine Fisheries Service, Northeast Fisheries Science Center, NOAA Technical Memorandum NMFS-NE-181. 179 p.

Surfclam and Ocean Quahog Advisory Panel. 2016. Fishery Performance Report (FPR) May 2016. Mid-Atlantic Fishery Management Council. Dover, DE. 10 p. http://www.mafmc.org/fishery-performance-reports/

Taormina, B., J. Bald, A. Want, G. Thouzeau, M. Lejart, N. Desroy, and A. Carlier. 2018. A Review of Potential Impacts of Submarine Power Cables on the Marine Environment: Knowledge Gaps, Recommendations and Future Directions. Renewable and Sustainable Energy Reviews 96: 380–91.

Taormina, B., C. Di Poi, A. Agnalt, A. Carlier, N. Desroy, R.H. Escobar-Lux, J. D'eu, F. Freytet, and C.M.F. Durif. 2020. Impact of Magnetic Fields Generated by AC/DC Submarine Power Cables on the Behavior of Juvenile European Lobster (*Homarus Gammarus*). Aquatic Toxicology 220: 105401.

Thomsen, F., K. Lüdemann, R. Kafemann, and W. Piper. 2006. Effects of offshore wind farm noise on marine mammals and fish, biola, Hamburg, Germany on behalf of COWRIE Ltd. https://tethys.pnnl.gov/sites/default/files/publications/Effects_of_offshore_wind_farm_noise_on_marine-mammals_and_fish-1-.pdf

Thunberg, E., J. Walden, J. Agar, R. Felthoven, A. Harley, S. Kasperski, J. Lee, T. Lee, A. Mamula, J. Stephen, and A. Strelcheck. 2015 Measuring changes in multi-factor productivity in U.S. catch share fisheries, *Mar. Policy* 62; 294–301.

UCSG (United States Coast Guard). 2020. The Areas Offshore of Massachusetts and Rhode Island Port Access Route Study. 199 p.
https://www.navcen.uscg.gov/pdf/PARS/FINAL_REPORT_PARS_May_14_2020.pdf.

USFWS (United States Fish and Wildlife Service) and NMFS (National Marine Fisheries Service). 2018. Recovery plan for the Gulf of Maine Distinct Population Segment of Atlantic salmon (*Salmo salar*). 74 p.

Wallace, D.H. and T.B. Hoff. 2005. Hydraulic clam dredge effects on benthic habitat off the northeastern United States. Amer. Fish. Soc. Symp. 41:691-693.

Weinberg, J.R. 2005. Bathymetric shift in the distribution of Atlantic surfclams: response to warmer ocean temperature. *ICES Journal of Marine Science*. 62(7): 1444-1453.

Wright, A.J., N.A. Soto, A.L. Baldwin, M. Bateson, C.M. Beale, C. Clark, et al. 2007. Do Marine mammals experience stress related to anthropogenic noise? *Int. J. Comp. Psychol.* 20, 274–316.

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 Moore, Executive Director, Mid-Atlantic Fishery Management Council,
Suite 201, 800 North State Street,
Dover, DE 19901

Appendix A

Co-occurrence of Atlantic surfclam and ocean quahog in the NEFSC Clam Survey and SCEMFIS Survey

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 (Figure4).

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.

SCEMFIS Survey

In the fall of 2021, a team from SCEMFIS partnered with an industry fishing vessel, the F/V Pursuit, to document the extent of this habitat overlap between surfclam and ocean quahog. They took samples in several areas, working through surfclam and ocean quahog habitats, as well as areas of intermingling in between. The team documented what was caught, its species, size, age, and location. After analyzing the data, the team found significant habitat overlap and intermixing between surfclams and ocean quahogs, much more than was expected at the start of the survey.

Figure 5 shows the dark pink boxes oriented inshore are locations where more than 24 of every 25 clams was a surfclam. In most cases, these tows were exclusively surfclam. Note that most of these stations are in the 30-40 m range. The yellow boxes generally on the inshore half of the intervening region are stations where at least 1 ocean quahog was present for every 25 clams, but no more than 12 (a 50:50 split). The brown boxes generally on the offshore half of the intervening region are stations where at least 1 surfclam was present for every 25 clams, but no more than 12 (a 50:50 split). Both of the station types yielding mixed clams occupy a substantial region between 40 and 55 m with the surfclam-rich stations somewhat inshore of the ocean quahog-rich stations.

For more details on the survey and its methods, see https://scemfis.org/.

Literature Cited

Hofmann, E. E., Powell, E. N., Klinck, J. M., 480 Munroe, D. M., Mann, R., Haidvogel, D. B., Narváez, D. A., Zhang, X., & Kuykendall, K. M. (2018). An overview of factors affecting distribution of the Atlantic surfclam (*Spisula solidissima*), a continental shelf biomass dominant, during a period of climate change. Journal of Shellfish Research, 37, 821-831.

Northeast Fisheries Science Center. (2016). In: 61st Northeast Regional Stock Assessment Workshop (61st SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 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. Technical Report NEFSC Ref. Doc. 17-05, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543-1026, 2017.

Powell, E. N., Klinck, J. M., Munroe, D. M., Hofmann, E. E., Moreno, P. & Mann, R. (2015). The value of captains' behavioral choices in the success of the surfclam (*Spisula solidissima*) fishery on the U.S. Mid-Atlantic coast: a model evaluation. Journal of Northwest Atlantic Fisheries Science, 47, 1-27.

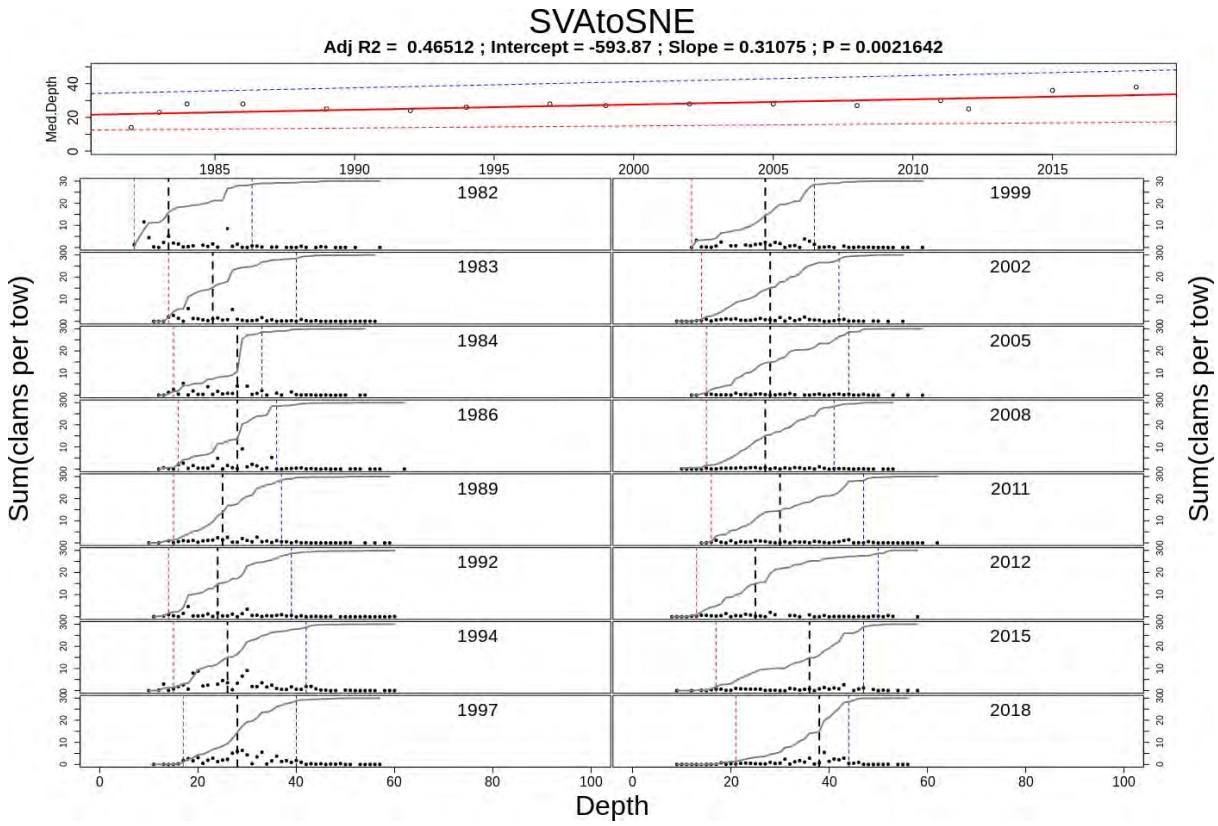

Figure 1. Total surfclam caught at depth by year in SVA to SNE. The points are clams caught aggregated by depth and the gray line is the cumulative sum of clams caught at depth. The black dashed vertical line is the depth at which half of the cumulative total clams caught in that survey were taken. If 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.

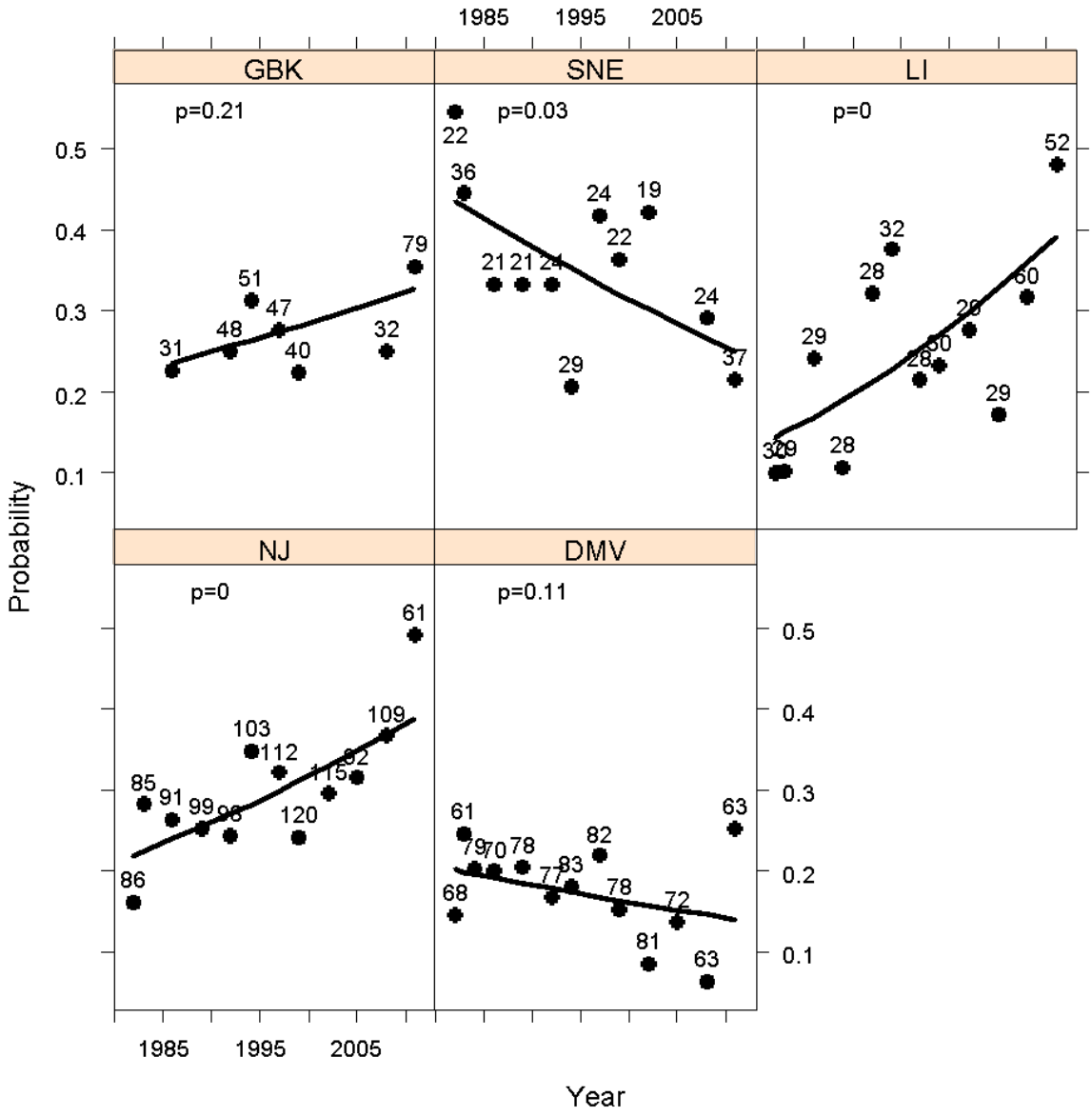

Figure 2. Trends in co-occurrence of surfclam and ocean quahog by region with p-values from a logistic regression (top of each panel) and sample sizes in each year.

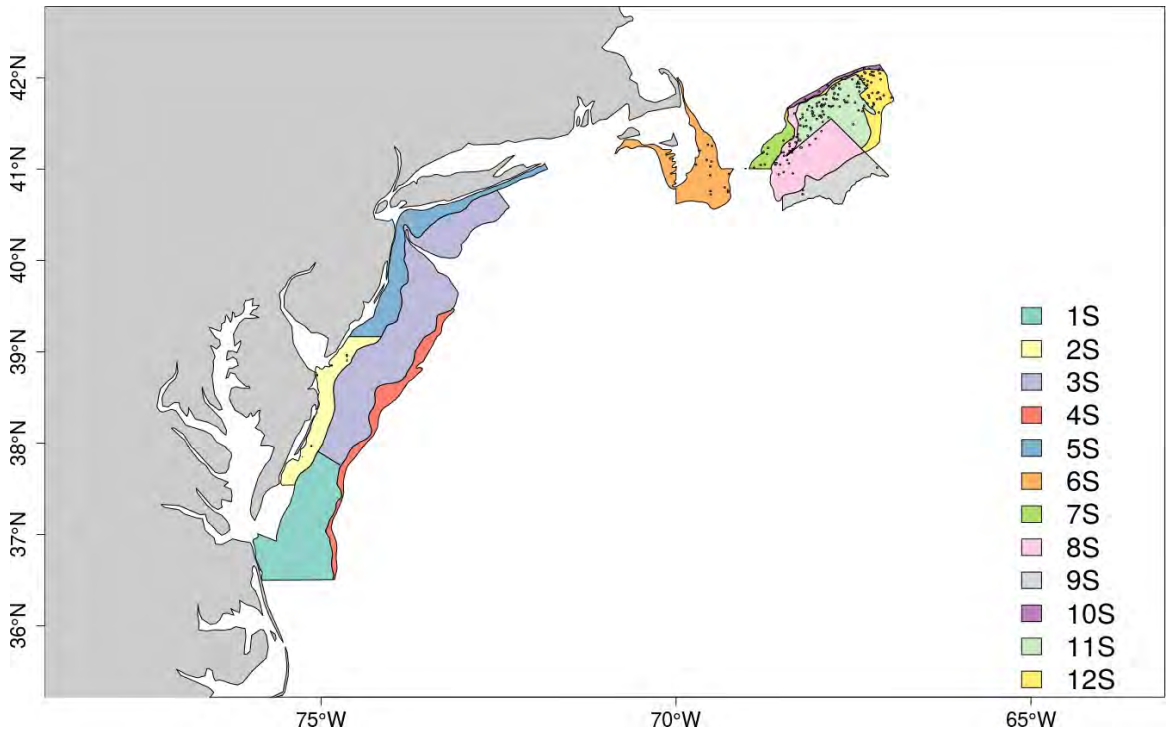

Figure 3. Atlantic surfclam strata used in the NEFSC clam survey.

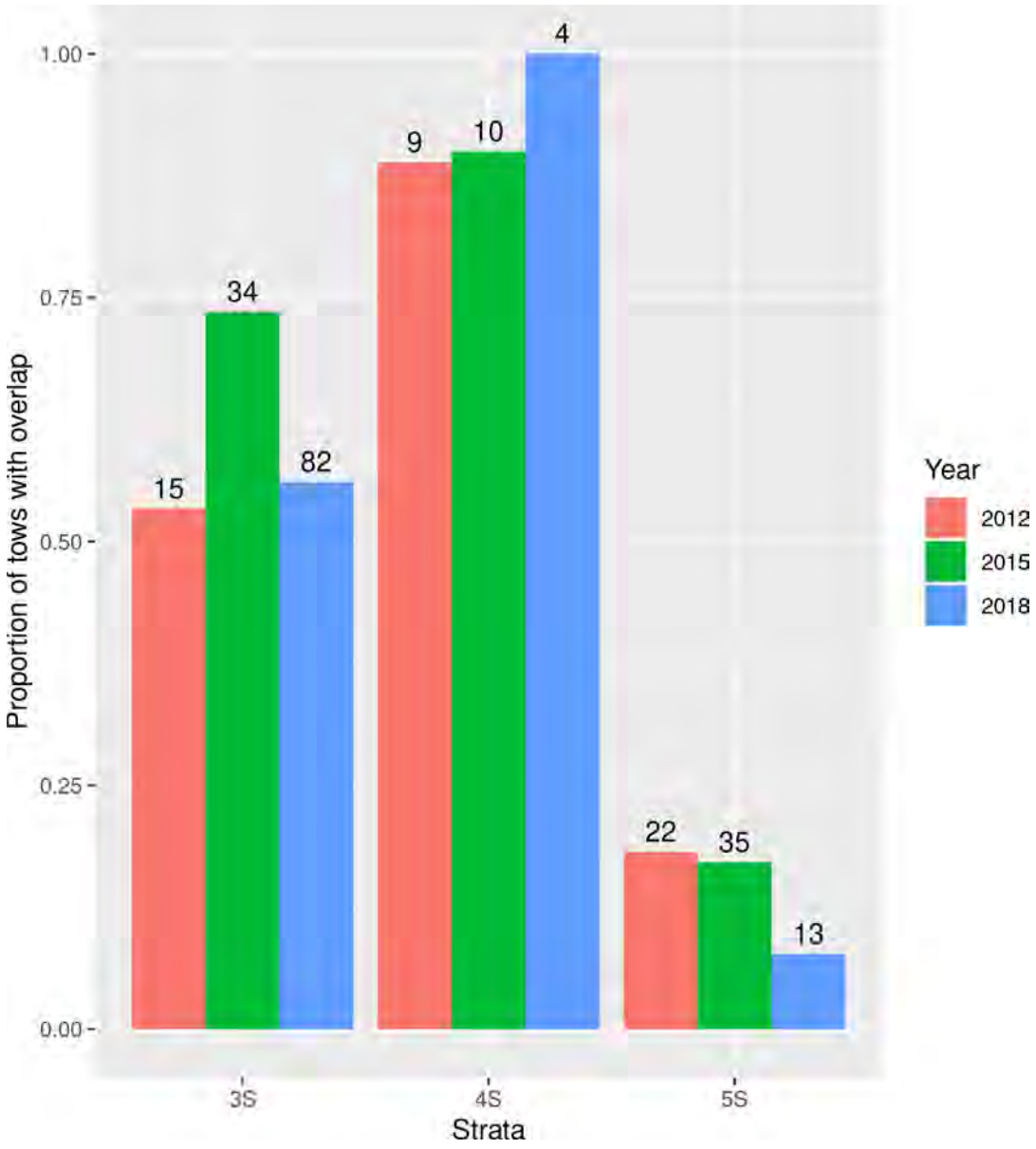

Figure 4. Proportion of all tows with 30+ total Atlantic surfclam containing at least 5% ocean quahog by number. Sample sizes are printed above each bar. Other strata in the southern area did not have sufficient tows that captured more than 30 surfclam to be included in this analysis.

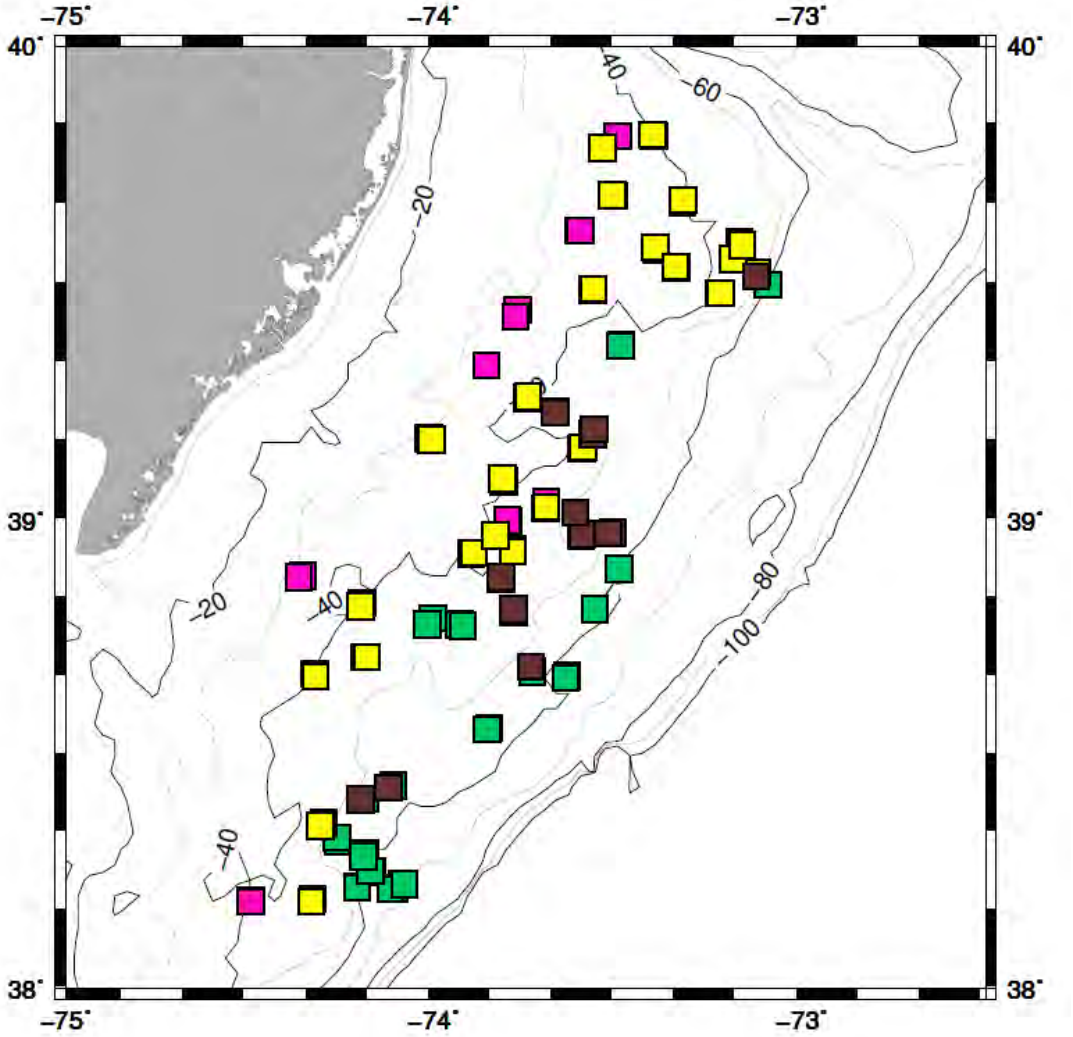

Figure 5. Locations sampled and catch characteristics. Dark pink boxes show locations where >24 of 25 clams were surfclams. Green boxes show locations where >24 of 25 clams were ocean quahogs. Yellow boxes show locations where at least 1 in 24 clams, but less than 12 in 24 were ocean quahogs. Brown boxes show locations where at least 1 in 24 clams, but less than 12 in 24 were surfclams.

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.

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

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
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
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

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
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
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

Appendix D

2020 Initial Surfclam Allocations

and

2020 Initial Ocean Quahog Allocations

2022 Initial Surfclam Allocations											
Alloc Nbr	**Owner**	**Street**	**City**	**ST**	**Zip**	**Telephone number**	**Ratio**	**Bushels**	**Tags**	**Tag Start**	**Tag End**
C624	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL	33410-6253	(443) 614-0377	0.133430588	453,664	14,177	1,038,095	1,052,271
C583	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL	33410-6253	(443) 614-0377	0.113054118	384,384	12,012	1,070,286	1,082,297
C632	Tristate Capital Bank	301 Grant St Ste 2700	Pittsburgh	PA	15219-6414	(866) 680-8722	0.081261176	276,288	8,634	1,092,261	1,100,894
C529	Farm Credit East, ACA	240 South Rd	Enfield	CT	06082-4451	(860) 741-4380	0.076829538	261,216	8,163	1,055,411	1,063,573
C669	US DOC NOAA/NOAA Fisheries Financial Services Division	55 Great Republic Dr	Gloucester	MA	01930-2276	(978) 281-9154	0.060376471	205,280	6,415	1,015,266	1,021,680
C666	US DOC NOAA/NOAA Fisheries Financial Services Division	55 Great Republic Dr	Gloucester	MA	01930-2276	(978) 281-9154	0.035209412	119,712	3,741	1,021,681	1,025,421
C136	Stephanie Dee Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL	33410-6253	(443) 614-0377	0.030776471	104,640	3,270	1,083,322	1,086,591
C8303	KeyBank National Association	401 Plymouth Rd Ste 600	Plymouth Meeting	PA	19462-1672	(610) 832-1736	0.028847059	98,080	3,065	1,032,485	1,035,549
C8315	MJ Clam Co, LLC	10105 Concord Rd	Seaford	DE	19973-8649	(302) 381-1115	0.027507648	93,536	2,923	1,087,158	1,090,080
C188	Blount Fine Foods Corporation	630 Currant Rd	Fall River	MA	02720-4713	(774) 888-1300	0.023209412	78,912	2,466	1,103,817	1,106,282
C009	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ	08210-2039	(609) 425-8983	0.022465882	76,384	2,387	1,029,002	1,031,388
C634	Tristate Capital Bank	301 Grant St Ste 2700	Pittsburgh	PA	15219-6414	(866) 680-8722	0.020517647	69,760	2,180	1,090,081	1,092,260
C546	Farm Credit East, ACA	240 South Rd	Enfield	CT	06082-4451	(860) 741-4380	0.019689952	66,944	2,092	1,052,272	1,054,363

C589	Yannis Karavia LLC	PO Box 600	Dorchester	NJ	08316-0600	(856) 785-8040	0.018992941	64,576	2,018	1,009,472	1,011,489
C8302	People's United Bank N.A.	1 Post Office Sq Ofc	Boston	MA	02109-2106	(617) 449-0351	0.016837647	57,248	1,789	1,100,895	1,102,683
C662	Farm Credit East, ACA	29 Landis Ave	Bridgeton	NJ	08302-4317	(856) 451-0933	0.014305882	48,640	1,520	1,007,647	1,009,166
C663	DPL ITQs LLC	PO Box 309	Millville	NJ	08332-0309	(856) 300-1010	0.014051765	47,776	1,493	1,003,401	1,004,893
C528	LNA Inc	PO Box 178	Portsmouth	RI	02871-0178	(401) 480-2090	0.013825882	47,008	1,469	1,036,626	1,038,094
C146	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD	21813-1528	(443) 497-2479	0.012935	43,968	1,374	1,004,894	1,006,267
C189	Anthony W Watson	10232 Golf Course Rd	Ocean City	MD	21842-9714	(410) 726-1317	0.012919022	43,936	1,373	1,027,629	1,029,001
C540	George Torggler	921 Preserve Dr	Annapolis	MD	21409-5750	(410) 320-3042	0.012358843	42,016	1,313	1,012,365	1,013,677
C638	Vongole Ragazzi LLC	48 Gorton Rd	Millville	NJ	08332-6202	(856) 300-1020	0.011642354	39,584	1,237	1,000,622	1,001,858
C8318	The George S Carmines Trust	10 Evans Cir	Poquoson	VA	23662-1606	(757) 715-7461	0.010128	34,432	1,076	1,035,550	1,036,625
C547	Farm Credit East, ACA	240 South Rd	Enfield	CT	06082-4451	(860) 741-4380	0.00985008	33,504	1,047	1,054,364	1,055,410
C8298	US DOC NOAA/NOAA Fisheries Financial Services Division	55 Great Republic Drive	Gloucester	MA	1930	(978) 281-9154	0.009173	31,200	975	1,026,654	1,027,628
C563	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.008734118	29,696	928	1,068,997	1,069,924
C674	US DOC NOAA/NOAA Fisheries Financial Services Division	55 Great Republic Dr	Gloucester	MA	01930-2276	(978) 281-9154	0.007811765	26,560	830	1,025,422	1,026,251

C110	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.007651765	26,016	813	1,065,988	1,066,800
C133	City of Southport Inc	854 Tern Ln Apt 103	Salisbury	MD	21804-2320	(410) 726-7807	0.007242	24,608	769	1,006,656	1,007,424
C065	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.006889412	23,424	732	1,068,265	1,068,996
C166	Nantucket Shoals Inc	147 Pine St	Rochester	MA	02770-1605	(508) 763-3155	0.006861176	23,328	729	1,102,684	1,103,412
C559	Sturdy Savings Bank	PO Box 900	Cape May Court House	NJ	08210-0900	(609) 463-5240	0.006587077	22,400	700	1,001,859	1,002,558
C613	NSR Resources LLC	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.006578191	22,368	699	1,063,626	1,064,324
C655	Audubon Savings Bank	509 S White Horse Pike	Audubon	NJ	08106-1312	(856) 656-2200	0.006409412	21,792	681	1,002,720	1,003,400
C007	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.006296471	21,408	669	1,064,325	1,064,993
C8290	Wellfleet Shellfish Company, Inc.	137 Holmes Rd	Eastham	MA	02642-2183	(508) 255-5300	0.006211765	21,120	660	1,031,389	1,032,048
C046	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.006004706	20,416	638	1,067,029	1,067,666
C215	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.00592	20,128	629	1,082,298	1,082,926
C151	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.005628235	19,136	598	1,067,667	1,068,264
C080	TMT Allocations Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.005327059	18,112	566	1,086,592	1,087,157
C454	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.005176471	17,600	550	1,064,994	1,065,543
C201	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD	21811-3160	(443) 783-1955	0.004356	14,816	463	1,011,490	1,011,952

C134	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.004178824	14,208	444	1,065,544	1,065,987
C8288	JKPL ITQ, LLC	PO Box 692	Port Norris	NJ	08349-0692	(856) 785-8040	0.004103926	13,952	436	1,032,049	1,032,484
C584	Mabel Susan III Inc	12 Rabbit Run	Cape May	NJ	08204-4423	(609) 884-0867	0.003877648	13,184	412	1,011,953	1,012,364
C149	Wando River Corporation	630 Currant Rd	Fall River	MA	02720-4713	(774) 888-1300	0.003806	12,928	404	1,103,413	1,103,816
C099	Mabel Kim Inc	12 Rabbit Run	Cape May	NJ	08204-4423	(609) 884-0867	0.00379294	12,896	403	1,013,815	1,014,217
C8297	US DOC NOAA/NOAA Fisheries Financial Services Division	55 Great Republic Drive	Gloucester	MA	1930	(978) 281-9154	0.003783529	12,864	402	1,026,252	1,026,653
C515	Dolores Truex	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.003717647	12,640	395	1,082,927	1,083,321
C033	Big Diamond Inc	12 Rabbit Run	Cape May	NJ	08204-4423	(609) 884-0867	0.003651765	12,416	388	1,006,268	1,006,655
C637	F/V Maude Platt Inc	515 Sanford Rd	Westport	MA	02790-3748	(508) 678-4071	0.003482353	11,840	370	1,000,252	1,000,621
C135	T & M Clammers Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.003397647	11,552	361	1,069,925	1,070,285
C561	Roy Osmundsen	14 Whippoorwill Ln	Cape May Court House	NJ	08210-2527	(609) 846-3718	0.003303528	11,232	351	1,014,915	1,015,265
C656	Farm Credit East, ACA	2 Constitution Dr	Bedford	NH	03110-6000	(603) 472-3554	0.002870588	9,760	305	1,009,167	1,009,471
C127	Gary Osmundsen	12 Rabbit Run	Cape May	NJ	08204-4423	(609) 884-0867	0.002682352	9,120	285	1,014,630	1,014,914
C229	Kenneth W and Sharon L Bailey	PO Box 12	Heislerville	NJ	08324-0012	(856) 207-1109	0.002503529	8,512	266	1,014,218	1,014,483

C079	Lauren Kim Inc	12 Rabbit Run	Cape May	NJ	08204-4423	(609) 884-0867	0.002362353	8,032	251	1,000,001	1,000,251
C008	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.002145882	7,296	228	1,066,801	1,067,028
C661	Farm Credit East, ACA	29 Landis Ave	Bridgeton	NJ	08302-4317	(856) 451-0933	0.002089412	7,104	222	1,007,425	1,007,646
C8296	Sturdy Savings Bank	PO Box 900	Cape May Court House	NJ	08210-0900	(609) 463-5240	0.001515044	5,152	161	1,002,559	1,002,719
C075	Seafish Inc	10134 Waterview Dr	Ocean City	MD	21842-9635	(443) 497-3062	0.001374118	4,672	146	1,014,484	1,014,629
C063	T & P Vessel Inc	210 Hagen Rd	Cape May Court House	NJ	08210-1175	(609) 425-2525	0.001285	4,384	137	1,013,678	1,013,814
C011	D & L Commercial Fish Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.000489412	1,664	52	1,063,574	1,063,625

2022 Initial Ocean Quahog Allocations											
Allocation Number	**Owner**	**Street**	**City**	**State**	**Zip**	**Telephone**	**Ratio**	**Bushels**	**Tags**	**Tag Start**	**Tag End**
Q8310	Bumble Bee Clam Ownership Co. Inc.	501 W Broadway	San Diego	CA	92101-3536	(619) 501-2700	0.217896014	1,162,048	36,314	2,049,408	2,085,721
Q649	Singer Island Ventures Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL	33410-6253	(443) 614-0377	0.144435027	770,272	24,071	2,113,341	2,137,411
Q199	Legend Inc	607 Seashore Rd	Cape May	NJ	08204-4615	(609) 884-1771	0.119084772	635,072	19,846	2,018,251	2,038,096
Q691	Tristate Capital Bank	301 Grant St Ste 2700	Pittsburgh	PA	15219-6414	(866) 680-8722	0.07296456	389,120	12,160	2,146,889	2,159,048
Q8314	MJ Clam Co, LLC	10105 Concord Rd	Seaford	DE	19973-8649	(302) 381-1115	0.056187667	299,648	9,364	2,137,525	2,146,888
Q690	Farm Credit East, ACA	29 Landis Ave	Bridgeton	NJ	08302-4317	(856) 451-0933	0.052101256	277,856	8,683	2,009,285	2,017,967
Q693	Surfside Seafood Products LLC	PO Box 600	Dorchester	NJ	08316-0600	(856) 785-2115	0.05151528	274,720	8,585	2,000,003	2,008,587
Q684	ITQ LLC	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.048939059	260,992	8,156	2,085,808	2,093,963
Q112	Wando River Corporation	630 Currant Rd	Fall River	MA	02720-4713	(774) 888-1300	0.043822	233,696	7,303	2,159,049	2,166,351
Q598	John W Kelleher Trust	PO Box 600	Dorchester	NJ	08316-0600	(856) 785-8040	0.043598466	232,512	7,266	2,038,106	2,045,371
Q685	NSR Resources LLC	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.040112342	213,920	6,685	2,095,031	2,101,715

Q629	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.033506094	178,688	5,584	2,105,535	2,111,118
Q006	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ	08210-2039	(443) 497-3062	0.016291018	86,880	2,715	2,046,693	2,049,407
Q115	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.010134633	54,048	1,689	2,102,774	2,104,462
Q181	Thomas E McNulty Sr	118 Springers Mill Rd	Cape May Court House	NJ	08210-2039	(609) 425-8983	0.007926495	42,272	1,321	2,045,372	2,046,692
Q672	OSM Resources LLC	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.007306	38,976	1,218	2,111,939	2,113,156
Q676	International Clam Management Inc	4371 Northlake Blvd # 369	Palm Beach Gardens	FL	33410-6253	(443) 614-0377	0.006402	34,144	1,067	2,093,964	2,095,030
Q005	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.006348397	33,856	1,058	2,101,716	2,102,773
Q049	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.00576036	30,720	960	2,104,575	2,105,534
Q128	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.004920308	26,240	820	2,111,119	2,111,938
Q109	Woodrow Laurence Inc	12310 Collins Rd	Bishopville	MD	21813-1528	(443) 497-2479	0.003912	20,864	652	2,008,588	2,009,239
Q101	T & M Clammers Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.001104069	5,888	184	2,113,157	2,113,340
Q193	Peter A Lamonica	PO Box 600	Dorchester	NJ	08316-0600	(856) 785-8040	0.000729	3,872	121	2,018,089	2,018,209

Q107	Anthony E and John D Martin	11014 Grays Corner Rd	Berlin	MD	21811-3160	(443) 783-1955	0.000725	3,872	121	2,017,968	2,018,088
Q174	Leroy E and Dolores Truex	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.000678042	3,616	113	2,137,412	2,137,524
Q084	LET Ventures Inc	PO Box 727	Manahawkin	NJ	08050-0727	(609) 978-1109	0.000672042	3,584	112	2,104,463	2,104,574
Q8319	The George S Carmines Trust	10 Evans Cir	Poquoson	VA	23662-1606	(757) 715-7461	0.000519	2,752	86	2,085,722	2,085,807
Q8282	F/V Mystic Light LLC	113 MacArthur Dr	New Bedford	MA	02740-7276	(401) 935-1623	0.000272	1,440	45	2,009,240	2,009,284
Q669	Kenneth W Bailey	PO Box 12	Heislerville	NJ	08324-0012	(856) 207-1109	0.000246	1,312	41	2,018,210	2,018,250
Q056	Seafish Inc	10134 Waterview Dr	Ocean City	MD	21842-9635	(443) 497-3062	0.0000543	288	9	2,038,097	2,038,105
Q143	Shellfish Inc	PO Box 86	West Sayville	NY	11796-0086	(631) 589-5770	0.0000121	64	2	2,000,001	2,000,002

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 1, 2022

To: Chris Moore, Executive Director

From: Kiley Dancy, Julia Beaty, and Hannah Hart, Staff

Subject: Overview of Percent Change Approach and Recreational Harvest Estimation Models for Development of 2023 Recreational Summer Flounder, Scup, and Black Sea Bass Measures

On Tuesday, December 13, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (Commission) Summer Flounder, Scup, and Black Sea Bass Board (Board) will recommend 2023 recreational management measures for all three species. Prior to the agenda items addressing 2023 recreational measures for each species, staff will provide an overview of the Percent Change Approach adopted under the Recreational Harvest Control Rule Framework/Addenda. This process must be followed for setting 2023 recreational measures for these three species. In addition, staff will summarize two newly available recreational harvest estimation models which can inform the measures setting process. These topics are summarized below.

Percent Change Approach

In June 2022, the Council and the Commission's Interstate Fishery Management Program Policy Board (Policy Board) approved a new process for setting recreational bag, size, and season limits (i.e., recreational measures) called the Percent Change Approach. They agreed to use this approach for summer flounder, scup, and black sea bass starting with 2023 measures.[1] Under this approach, measures in the upcoming year(s) will aim to achieve a specified percent change in harvest compared to expected harvest under the current measures. Unlike the previous process, the appropriate percent change in harvest will no longer be primarily based on a comparison of expected harvest under status quo measures to the recreational harvest limit (RHL). Instead, the appropriate percent change will be defined by the following two factors:

1) Comparison of a confidence interval (CI) around an estimate of expected harvest in the upcoming year(s) under status quo measures to the average RHL for the upcoming two years and
2) Biomass compared to the target level, as defined by the most recent stock assessment.

[1] The Council and Policy Board intend for the Percent Change Approach to also apply to bluefish once that stock is no longer under a rebuilding plan. They also agreed, for all stocks, that this approach should be used through 2025 with the goal implementing a new process for setting recreational measures for 2026 and beyond.

The resulting percent change in harvest that measures should aim to achieve is summarized in Table 1.

Table 1: Process for determining appropriate percent change in expected harvest when developing measures under the Percent Change Approach.

Column 1 **Future RHL vs Harvest Estimate**	*Column 2* **Biomass compared to target level** (SSB/SSB_{MSY})	*Column 3* **Change in Harvest**
Future 2-year average RHL is **greater than** the upper bound of the harvest estimate CI (harvest expected to be lower than the RHL)	**Very high** (greater than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%
	High (at least the target level, but no higher than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below the target stock size)	**Liberalization**: 10%
Future 2-year average RHL is **within** harvest estimate CI (harvest expected to be close to the RHL)	**Very high** (greater than 150% of target)	**Liberalization**: 10%
	High (at least the target level, but no higher than 150% of target)	**No liberalization or reduction:** 0%
	Low (below the target stock size)	**Reduction:** 10%
Future 2-year average RHL is **less than** the lower bound of the harvest estimate CI (harvest is expected to exceed the RHL)	**Very high** (greater than 150% of target)	**Reduction:** 10%
	High (at least the target level, but no higher than 150% of target)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below the target stock size)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%

This process is intended to allow recreational measures to remain unchanged across two years, aligned with the timing of updated management track stock assessments, which are expected to be available every other year. However, **measures will be set on a one-year cycle for 2023 given that 2023 is an interim year for the management track assessments**. It is anticipated that this process will be used for a two-year cycle starting with 2024-2025.

For 2023, the Monitoring Committee (MC) has followed the steps below in determining their recommendations for the appropriate percent change in harvest and the associated measures. Details can be found in the briefing tabs for each species and in the MC meeting summary from November 15, 2022.

1. **For each species, what is expected 2023 harvest under 2022 measures, including a confidence interval around that estimate?** To generate these estimates, the MC considered results from the newly available fishery models (see section below), including a median estimate of harvest and confidence intervals around this estimate. For each species, the MC identified which of the two models they felt was most appropriate for each species for 2023 and applied an 80% confidence interval.
2. **How do the harvest estimate CIs generated through step 1 compare to the 2023 RHL for each species?**[2] This defines the appropriate cell in Table 1, Column 1.
3. Based on the step above and the appropriate biomass category in Table 1, Column 2 for each species (based on 2021 management track assessment results), the MC **determined the necessary percent change in harvest that 2023 measures should aim to achieve**. This is defined by the relevant cell in Table 1, Column 3. As described in the summary of the November 15, 2022 MC meeting,[3] the MC recommended a modification for scup due to the triggering of an accountability measures.
4. Considering the outcome of step #3, the **MC recommended specific recreational measures** for each species.

State waters measures will be developed in early 2023 by states working with the Technical Committee, considering feedback received at state-hosted public hearings, with review and consideration for approval by the Board.

Accountability Measures under the Percent Change Approach

The Recreational Harvest Control Rule Framework/Addenda made minor changes to the recreational accountability measures (AMs). The revised AMs are described below.

Recreational AMs are triggered for these three species when the most recent 3-year average of recreational dead catch (i.e., landings and dead discards) exceeds the most recent 3-year average recreational annual catch limit (ACL). The appropriate response varies based on the criteria listed below.

1. If the stock is overfished ($B < \frac{1}{2} B_{MSY}$), under a rebuilding plan, or the stock status is unknown: The exact amount, in pounds, by which the most recent year's recreational ACL has been exceeded, will be deducted in the following fishing year, or as soon as possible once catch data are available. This payback may be evenly spread over two years if doing so allows for use of identical recreational management measures across the upcoming two years.
2. If biomass is above the threshold, but below the target ($\frac{1}{2} B_{MSY} < B < B_{MSY}$), and the stock is not under a rebuilding plan:

[2] The 2024 RHL will not be determined until 2023 after the results of the 2023 management track assessments are available for all three species. Therefore, although the Percent Change Approach indicates that the upcoming two-year average RHL will be used, only the 2023 RHL will be used in this first year of implementation.

[3] To be posted to https://www.mafmc.org/briefing/december-2022 once it is available.

- If only the recreational ACL has been exceeded, then adjustments to the recreational management measures (bag, size, and seasonal limits) would be made in the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measures and the conditions that precipitated the overage.
- If the most recent estimate of total fishing mortality exceeds F_{MSY} (or the proxy), then an adjustment to the recreational ACT will be made as soon as possible as a payback that will be scaled based on stock biomass. The calculation for the payback amount in this case is: (overage amount) * $(B_{msy}-B)/½\ B_{msy}$. This payback may be evenly spread over two years if doing so allows for use of identical recreational measures across the upcoming two years. If an estimate of total fishing mortality is not available for the most recent complete year of catch data, then a comparison of total catch relative to the ABC will be used.

3. If biomass is above the target ($B > B_{MSY}$): Adjustments to the recreational management measures (bag, size, and seasonal limits) will be made for the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measures and the conditions that precipitated the overage.

As described in more detail in the species-specific briefing materials for the December 2022 Council/Board meeting,[4] AMs have been triggered for scup and black sea bass, but not for summer flounder. As described below, given that scup and black sea bass are currently above their target biomass levels, the AMs require adjustments to the recreational management measures, but they do not specify how those adjustments should be made.

On October 20, 2022, the NMFS Greater Atlantic Regional Fisheries Office Regional Administrator sent a letter to the Council (see attachment) stating that given actions taken by the Council and Commission over the past year, including revisions to the commercial/recreational allocation, restrictions to the recreational scup and black sea bass measures in 2022, and final action on the Recreational Harvest Control Rule Framework/Addenda, no additional action, beyond changes which may be required through the Percent Change Approach, is needed to address the triggering of an AM for scup or black sea bass.

Overview of New Recreational Fishery Models

The Council and Commission have supported development of two statistical models to predict the impacts of recreational bag, size, and season limits on recreational harvest and discards of summer flounder, scup, and black sea bass.

The Recreational Demand Model (**RDM**) accounts for the impacts of regulations, year class strength, population size, and angler preferences on harvest and discards. Year class strength and population size are based on stock assessment projections. Angler preferences are based on a survey of anglers from Maine through Virginia. This model also accounts for the interaction of summer flounder, scup, and black sea bass fishing regulations on angler behavior. Additional information about this model can be found in this overview document: https://www.mafmc.org/s/fluke-RDM-overview-final-report.pdf. Since the October 2022 MC meeting, this model was updated to account for inflation in trip costs and to incorporate more recent length-weight data for black sea bass.

[4] Available at https://www.mafmc.org/briefing/december-2022

The Recreational Fleet Dynamics Model (**RFDM**) uses a shape constrained additive model to predict harvest and discards based on management measures. Covariates in the models to predict harvest include year, state, minimum size, open season, bag limit, a lagged recruitment variable (for summer flounder and black sea bass), spawning stock biomass (for scup), and the RHL (for summer flounder and black sea bass). Mode (i.e., for-hire vs. private/rental and shore modes) is also included as a variable for scup only. Inclusion of some covariates varied across species based on best model fit and the best judgement of the modelers. An R Shiny App[5] is being developed for this model to allow the MC to modify management measures and view the resulting predicted harvest and discards. Additional information about this model can found in this overview document: https://www.mafmc.org/s/RFDM_CompleteModel_WriteUps_Oct2022_FinalDraftclean.pdf. Since the October 2022 MC meeting, this model was updated to add 2021 data. The average weight per harvested fish was also updated based on 2021 average weights.

Both models allow for consideration of varying management measures at the state and wave level. Both models were reviewed by the Council's Scientific and Statistical Committee in September 2021[6] and have been improved since that time based on their recommendations. Neither model is required under the Percent Change Approach; however, both models are an improvement over past methods of predicting future harvest. The MC reviewed both models and provided recommendations for which model to use for each species for setting 2023 management measures, as described in the summary of the November 15, 2022 MC meeting.[7]

[5] An R Shiny app is an interactive web-based app that can be easily accessed and used by others, in this case to explore sets of measures on a state or coastwide scale and display outputs of each scenario.

[6] The final report from the SSC review is available at https://www.mafmc.org/s/05_Rec-Model-Peer-Review-Reports.pdf.

[7] To be posted to https://www.mafmc.org/briefing/december-2022 once it is available.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

October 20, 2022

Dr. Christopher Moore
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 1990

Dear Chris:

We recently completed the 2020 and 2021 summer flounder, scup, and black sea bass year-end catch accounting, and the final report is attached to this letter. Summary tables are provided below (Tables 1 and 2).

In 2020, there were no overages of the acceptable biological catches (ABC) or overfishing limits (OFL) for summer flounder and scup. Black sea bass catch exceeded the ABC, but not the OFL. There were no overages of the commercial annual catch limits (ACL) or quotas in 2020. The performance of the recreational fisheries was variable and is discussed further below.

Table 1: Fishing year 2020 summer flounder, scup, and black sea bass catch, OFLs and ABCs (amounts presented in metric tons (mt)).

Stock	Total Catch	OFL	Difference	ABC	Difference
Summer Flounder	11,234	14,034	-22%	11,354	-1%
Scup	14,735	18,674	-24%	16,227	-10%
Black Sea Bass	8,112	8,795	-8%	6,835	17%

In 2021, there were no overages of the ABCs or OFLs for summer flounder and scup. Black sea bass catch exceeded the ABC and the OFL. There were no overages of the commercial ACLs or quotas in 2021.

Table 2: Fishing year 2021 summer flounder, scup, and black sea bass catch, OFLs, and ABCs (amounts presented in metric tons (mt)).

Stock	Total Catch	OFL	Difference	ABC	Difference
Summer Flounder	9,646	14,367	-39%	12,297	-24%
Scup	15,512	16,012	-3%	15,791	-2%
Black Sea Bass	9,868	8,021	21%	7,916	22%

Black Sea Bass Overage
In 2021, the black sea bass OFL was 8,021 mt, and total catch was 9,871 mt, corresponding to a 21-percent overage. Although the catch exceeded the OFL, we do not yet have the information required to determine if overfishing was occurring. The status determination criteria for black sea bass make use of the annual fishing mortality rate (F) relative to a maximum fishing mortality rate (MFMT) to determine if overfishing has occurred. The 2022 data update from

the Center did not include estimates of fishing mortality. A research track and management track assessment for black sea bass will be available in 2023. The current status update did indicate that the relative abundance of black sea bass, derived from the Northeast Fisheries Science Center spring bottom trawl survey, has steadily increased since 2015. Age composition data also show above average 2015, 2016, and 2019 cohorts. When the updated stock assessments are available, we will determine if any additional action is required.

Recreational Annual Catch Limit Evaluation

To assess whether accountability measures were triggered for the recreational summer flounder, scup, and black sea bass fisheries, the three-year average recreational catch is compared to the three-year average recreational ACL. This comparison is provided in Tables 3, 4, and 5. We also note whether numbers were generated from the Coastal Household Telephone Survey (CHTS) or Fishing Effort Survey (FES).

Due to data gaps in 2020 and 2021, we were unable to perform the typical evaluation and estimation of recreational discards. To generate discard estimates, an ad hoc approach was used that applies the mean weight of a discarded fish from 2019 to the number of dead discards.

Table 3: Summer Flounder Three-Year Average Recreational Catch vs. ACL (2019-2021), in mt

Fishing Year	Landings	Discards	Total Catch	ACL	MRIP
2019	3,538	1,379	4,917	5,218	FES
2020	4,565	1,448	6,013	5,218	FES
2021	3,091	922	4,083	5,662	FES
		Average	**5,004**	**5,366**	

Table 4: Scup Three-Year Average Recreational Catch vs. ACL (2019-2021), in mt

Fishing Year	Landings	Discards	Total Catch	ACL	MRIP
2019	2,454	188[1]	2,642	3,633	CHTS
2020	5,858	521	6,379	3,570	FES
2021	7,539	616	8,155	3,474	FES
		Average	**5,725**	**3,559**	

Table 5: Black Sea Bass Three-Year Average Recreational Catch vs. ACL (2019-2021), in mt

Fishing Year	Landings	Discards	Total	ACL	MRIP
2019	1,569	227	1,796	2,083	CHTS
2020	4,103	1,569	5,672	3,668	FES
2021	5,428	1,903	7,330	3,596	FES
		Average	**4,933**	**3,116**	

[1] The 2019 scup recreational discard estimate has been revised. The estimate in the January 15, 2021, GARFO to MAFMC letter was incorrect because it was based on the FES. The estimate should have been based on the CHTS because the 2019 ACL was based on an assessment that did not include the MRIP data update. This revised discard estimate is based on the CHTS. This correction does not change the fact that the recreational harvest, in 2019, was less than the recreational ACL.

Recreational catch of scup and black sea bass exceeded their respective ACLs, triggering the accountability measure. When biomass is above the target, as it is for both scup and black sea bass, the accountability measure does not require a pound-for-pound payback, or specific percent reduction. The accountability measure requires that adjustments to the recreational management measures, taking into account the performance of the measures and conditions that precipitated the overage, will be made in the following fishing year, or as soon as possible thereafter, once catch data are available, as a single-year adjustment. Knowing that recreational overages were likely, the Council and Board took proactive action and implemented reductions to recreational measures in 2022 for both scup and black sea bass. The Council and Board also adopted revised commercial and recreational allocations and a new approach to setting recreational management measures, with a continued commitment to improving the management of the recreational fisheries. Given all of the steps the Council and Board have recently taken, we have determined that no additional action is required to address the overages.

If you have any questions on the report, please contact Emily Keiley at (978) 281-9116.

Sincerely,

Michael Pentony
Regional Administrator

cc: Dr. Jon Hare, Science and Research Director, Northeast Fisheries Science Center

Enclosure

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 1, 2022

To: Chris Moore, Executive Director

From: Hannah Hart, Staff

Subject: Scup Recreational Measures for 2023

On Tuesday, December 13, the Council and Board will consider 2023 recreational management measures for scup. Materials listed below are provided for the Council and Board's discussion of this agenda item. Please note that some materials will be posted at a later date, as noted below.

1) Summary of November 15, 2022 Monitoring Committee meeting
2) Council staff memo on 2023 recreational scup measures dated November 9, 2022
3) Summary of October 26, 2022 Monitoring Committee meeting
4) 2020-2021 Year-End Catch Accounting and Accountability Measures Letter from GARFO dated October 20, 2022 (*behind Tab 5*)
5) Email comments from advisors and others on summer flounder, scup and/or black sea bass recreational measures received by November 30, 2022

The following materials will be posted to the meeting page once they are available:

6) Summary of the November 30, 2022 Advisory Panel meeting
7) Any additional public comments received by the supplemental comment deadline of December 8, 2022

Summer Flounder, Scup, and Black Sea Bass Monitoring Committee (MC)
November 15, 2022 Webinar Meeting Summary

Monitoring Committee Attendees: Tracey Bauer (ASMFC staff) Julia Beaty (MAFMC staff), Peter Clarke (NJ F&W), Kiley Dancy (MAFMC staff), Lorena de la Garza (NC DMF), Steve Doctor (MD DNR), Alexa Galvan (VMRC), Emily Keiley (GARFO), Hannah Hart (MAFMC staff), Mike Schmidtke (SAFMC staff), Rachel Sysak (NY DEC), Mark Terceiro (NEFSC), Corinne Truesdale (RIDEM), Sam Truesdell (MA DMF), Greg Wojcik (CT DEEP), Rich Wong (DE DFW)

Additional Attendees: Chris Batsavage, Alan Bianchi, Bonnie Brady, Lou Carr-Harris, Greg DiDomenico, Michelle Duval, James Fletcher, Tom Fote, Pat Geer, Emerson Hasbrouck, Dewey Hemilright, Meghan Lapp, John Maniscalco, Jason McNamee, Nichola Meserve, Adam Nowalsky, Scott Steinback, Wes Townsend, Mike Waine

General Comments

Model Comparisons

As discussed at the October 2022 MC meeting, two new statistical models are available this year for estimating harvest under specific measures. These models include:

- Recreational Demand Model (**RDM**): This model accounts for the impacts of regulations, projected population abundance and size distribution, and angler preferences on harvest and discards. Year class strength and population size are based on stock assessment projections. Angler preferences are based on a survey of anglers from Maine through Virginia. This model also accounts for the interaction of summer flounder, scup, and black sea bass fishing regulations on angler behavior. Additional information about this model can be found in this overview document: https://www.mafmc.org/s/fluke-RDM-overview-final-report.pdf. Since the October 2022 MC meeting, this model was updated to account for inflation in trip costs and to incorporate more recent length-weight data for black sea bass.
- Recreational Fleet Dynamics Model (**RFDM**): This model uses a shape constrained additive model to predict harvest and discards based on management measures. Covariates in the models to predict harvest include year, state, minimum size, open season, bag limit, a lagged recruitment variable (for summer flounder and black sea bass), spawning stock biomass (for scup), and the RHL (for summer flounder and black sea bass). Mode (i.e., for-hire vs. private/rental and shore modes) is also included as a variable for scup only. Inclusion of some covariates varied across species based on best model fit and the best judgement of the modelers. An R Shiny App[1] is being developed for this model to allow the MC to modify management measures and view the resulting predicted harvest and

[1] An R Shiny app is an interactive web-based app that can be easily accessed and used by others, in this case to explore sets of measures on a state or coastwide scale and display outputs of each scenario.

discards. Additional information about this model can found in this overview document: https://www.mafmc.org/s/RFDM_CompleteModel_WriteUps_Oct2022_FinalDraftclean.pdf. Since the October 2022 MC meeting, this model was updated to add 2021 data. The average weight per harvested fish was also updated based on 2021 average weights.

The MC discussed the appropriate model to use for each species for estimating 2023 harvest under 2022 measures (as required under the Percent Change Approach) and for adjusting measures for federal and state waters.

Neither model can evaluate federal waters measures independently from state measures. The MC agreed this is not an issue for summer flounder or black sea bass, where measures are either identical in state and federal waters (coastwide measures) or the federal waters measures are waived (conservation equivalency). After some discussion, the MC agreed this would also not be an issue for scup given that most scup harvest occurs in state waters. The models can be used for setting state waters scup measures with the assumption that overall harvest will be driven primarily by those measures as opposed to the federal waters measures.

While the MC generally prefers consistency, they agreed that there may be reasons to prefer one model over the other for a particular species, including the ability to model certain regulations, the performance of the model, and the information used in each model, as discussed below. However, one MC member noted a general preference for the RDM given that it considers angler behavior and had narrower confidence intervals (CIs) than the RFDM.

The group supported continued evaluation of both models and their performance for each species, particularly with a comparison to MRIP data, as these models get applied in the first few years. Model performance evaluations were presented during the MC meeting; however, the results were presented in different ways for each model, which made it difficult to directly compare the results. In the future, the MC recommended that performance of the two models be presented the same way, including a side-by-side table of results of each model for ease of comparison and increased transparency. The MC agreed it may not be constructive or efficient to run two models every year; however, they preferred not to be restricted to using the same model for each species every year at this early stage in applying them. Evaluating model performance over more than one year of the recreational measures process may be helpful.

The MC discussed the possibility of averaging outputs from the two models. They agreed this would be complicated for determining how to adjust measures, especially at the state level. It would also be more time intensive to run and reconcile multiple model results for many different configurations of measures.

Confidence Intervals

The MC agreed with the staff recommendation to use 80% CIs for all three species for setting 2023 measures. MC members noted that this recommendation is based on a previous analysis of MRIP data by the Recreational Harvest Control Rule Framework/Addenda Fishery Management Action Team/Plan Development Team (FMAT/PDT) and in general, would be expected to include reasonably tight bounds around the estimates. MC members also noted that CIs that are too wide would limit the ability of managers to respond appropriately to changes in the fishery and would increase the likelihood of remaining in the middle rows of the Percent Change Approach table (see Appendix 1) when other rows may be more appropriate.

One MC member asked for clarification on why 80%, 90% and 95% CIs were presented as opposed to other CIs such as 70%. Staff clarified that 80% is based on the prior FMAT/PDT recommendation. The 90% and 95% CIs were also shown for comparison because they are typical CIs used in other contexts. Staff also noted that the MC could recommend other CIs and both the RDM and RFDM can calculate any percentage CIs.

One MC member asked how the CIs calculated by the RDM and RFDM compare to the CIs around the annual MRIP estimates. Staff said this comparison has not yet been done. CIs generated from model outputs are not directly comparable to MRIP percent standard errors (PSEs). Prior to availability of the models, the FMAT/PDT analysis used MRIP PSE values to calculate the CIs, but the models consider other factors in addition to MRIP data. CIs are generated from the range of values produced by the model for each run.

Although the MC supported the use of 80% CIs for all three species for setting 2023 measures, they also recommended further analysis and further discussion in 2023 of the most appropriate CI over the longer-term.

MC Comments on the Percent Change Approach

The MC discussed that the choice of model (or other) estimates of harvest and choice of the CI under the Percent Change Approach should be rooted in technical justification. They agreed that they should not adopt recommendations based on desire for a particular outcome. In the future, a side-by-side view of model performance may help with these conversations. They also acknowledged that there may be situations where they do not believe the resulting bin is appropriate for a given species in that year. However, they must follow the Percent Change Approach bins as they have been laid out by the Council and Board.

One MC member noted that under the Percent Change Approach, CIs are only considered when determining the appropriate percent change in coastwide harvest. CIs are not used when determining which combinations of measures would achieve that percentage change. Instead, measures will be evaluated based on point estimates. This MC member said this feels like a disconnect within the Percent Change Approach and may create challenges when setting measures.

Some MC members expressed some concerns about how the Percent Change Approach relates to recreational Accountability Measures (AMs). For example, as discussed below for scup, in some situations the Percent Change Approach could specify a liberalization despite an AM requiring some degree of reduction also being triggered.

Stability was a primary goal of the Recreational Reform Initiative. Starting with 2024 measures, the Percent Change Approach may provide some increased stability by setting measures for two years at a time. However, the MC expressed **concern that the Percent Change Approach may require frequent changes in measures even in situations when managers would otherwise prefer status quo**. For example, when biomass falls into the "Very High" category there is no option for status quo under this approach; the only options will be to liberalize or reduce harvest.

Scup

One MC member questioned if the Percent Change Approach puts the scup fishery at risk of exceeding the overfishing limit (OFL) given it would allow major RHL overages in 2023. The MC member also questioned if either the RDM or RFDM provides an estimate of fishing mortality (F). Staff responded that hypothetically if the commercial sector were to catch their full Annual Catch

Limit, there is potential for the scup fishery to exceed the OFL in 2023; however, given recent trends in commercial harvest it is not expected that the commercial sector will harvest the full commercial quota and therefore it is less likely that the scup fishery will exceed the OFL in 2023. Staff also confirmed that neither model produces an estimate of F but an updated management track stock assessment in 2023 (and every other year going forward) will provide those details.

The MC did not reach consensus on the recommended model to use for setting 2023 scup measures. After a second vote as described in more detail below, **six MC members supported use of the RFDM, three MC members were in support of using the RDM, and three MC members abstained.**

MC Considerations for using the RFDM

2021 data were added to the RFDM model based on recommendations made during the October 2022 MC meeting. New model estimates that were not previously available to the MC were presented during the meeting (Table 1). When converted to pounds of fish, the new model estimates changed the outcome under the Percent Change Approach. This change resulted in scup falling in the 10% liberalization bin instead of the 10% reduction bin based on previous model results (Table 3, column 3).

The RFDM modelers presented a retrospective analysis that shows that the model does a decent job of predicting harvest, with MRIP harvest point estimates generally falling within the upper and lower quartiles of the model estimates in each year since 2014. The out-of-sample predictions (where a single year's worth of data is removed from the model and then predicted by the model) shows fairly consistent results, except for a notable underprediction in 2016 and 2017. For discards, the retrospective analysis indicates the model does a decent job of estimating discards as well, generally falling within or just outside the upper and lower quartiles of the model estimates each year.

Table 1: Updated RFDM results for scup presented during the November 15 MC meeting compared to RFDM estimates provided in the meeting materials. The model was updated to include 2021 data. All values are in millions of pounds. *Note RFDM provides estimates in number of fish, which were converted to pounds based on the average weight of harvested fish from the most recent year of MRIP data incorporated into the RFDM (i.e., 2019 for the results included in the briefing materials and 2021 for the results presented during the November 15 MC meeting).*

RFDM output	Estimated 2023 harvest under 2022 measures	95% CI	90% CI	80% CI	2023 RHL
Included in 11/15 MC meeting materials	16.84 (median)	8.21 – 31.38	9.38 – 28.10	10.73 – 25.68	9.27
Updated model results presented during MC meeting	14.42 (median)	6.87 – 28.38	7.83 – 25.87	8.95 – 23.08	

MC Considerations for using the RDM

The RDM modeler presented out-of-sample predictions for 2018-2020 and preliminary 2022. For this analysis the model was calibrated to 2021 and the appropriate measures were set for each year. This analysis indicated the model did a better job at predicting recent years, 2020 and preliminary 2022, compared to earlier years, 2018-2019. In recent years, estimates of harvest and total catch

fall within the MRIP PSEs. For 2022 data through wave 4, the model is just slightly underpredicting harvest.

Other Considerations and MC Recommendations for 2023 Measures

Some MC members initially leaned towards taking an average of the two models to inform the process for this year. These MC members initially said they did not have a strong opinion on which model to use since it is not possible to directly compare the model performance results as presented during the meeting. These MC members felt using both models may be appropriate, especially in this first year of using them. However, as described in General Comments above, it would complicate the process of determining what measures should be taken to achieve the percent change in harvest required and which model would then be used to make that determination. Another MC member noted it may be inappropriate to average the two models for scup given they result in opposing percent change results.

Other MC members leaned towards the RDM because it incorporates angler behavior or the RFDM due to the ability of state staff to easily run their own regulation queries by using the R Shiny App. It was also noted that the RFDM could consider mode for scup and the RDM could not. One MC member noted they were uncomfortable with the choice presented to the MC and felt it was inappropriate to choose a model based on the preferred outcome as opposed to model performance. Other MC members voiced general frustration with the Percent Change Approach options for scup in 2023 being limited to a 10% reduction or 10% liberalization, when many members believed status quo to be more appropriate. Initially, the MC took a vote on three options, 1) use of the RDM, 2) use of the RFDM, or 3) averaging the two model results. Initially, the MC identified the RDM as the model to use in 2023. However, this vote was later revisited following additional discussion during black sea bass and summer flounder. The second vote was modified and only polled the group on the use of the RFDM or the RDM. As described above, this vote resulted in six MC members in favor of the RFDM, three in favor of the RDM, and three abstentions.

Given the lack of consensus on model preference and the resulting percent change in harvest required by each model, the MC discussed recommendations under both scenarios. The RFDM would result in a 10% liberalization. Two MC members expressed concern about the wide CIs produced by the RFDM compared to the RDM. They noted that the wide CIs are less meaningful for management and questioned if a 10% liberalization is truly the appropriate result for scup under the Percent Change Approach. They reiterated concerns expressed earlier related to the use of a higher percent CI (i.e., 95% or 90%) and noted having similar concerns for all CIs under the RFDM. Another MC member said they were less worried about the wide CIs produced by the RFDM given uncertainty in the MRIP data, and such wide CIs might be appropriate for scup. The majority, but not all MC **members agreed that because the AMs were triggered this year and due to recent fishery performance, a liberalization would not be appropriate for scup; however, because biomass is currently almost two times the target, it would be appropriate to recommend status quo instead.** All MC members that voted in favor of the RFDM voted for this model option under the stipulation that status quo measures would be recommended for scup. However, one MC member noted that because the AMs state "adjustments to measures will be made," status quo measures may not be justifiable under current regulations.

In contrast, the RDM would result in a 10% reduction. Therefore, if the Council/Board prefer to use the RDM or if GARFO indicates a liberalization or status quo does not satisfy the triggered AMs, the MC discussed their preferred action under the 10% reduction scenario. However, it is

important to note that because the majority of MC members voted in favor of the RFDM, the MC recommendation for 2023 scup measures was status quo. After reviewing the information presented by staff and the additional RDM analysis of different sets of measures, the MC agreed with the staff recommended option for a reduced coastwide possession limit of 15 fish with additional adjustments to state waters measures made through the Commission's process to achieve the full 10% reduction. One MC member expressed dropping the possession limit would negatively impact party/charter boats fishing in federal waters during winter months. For-hire captains in the past argued in favor of high possession limits to attract clients and promote trips to be worth the client's time and money. This MC member said for many of these captains this is their only source of income and that a significant decrease in the possession limit could negatively impact their ability to sell and run trips. One MC member expressed interest in further evaluation of a coastwide possession limit that would achieve the full 10% reduction simply to better understand how much of a reduction would be necessary. Another MC member expressed interest in modifying the open season for scup but agreed with the staff recommendation that it would be more appropriate to implement a seasonal closure on a state by state or regional scale as opposed to a coastwide closure in federal waters.

Public Comments

One AP member asked what the harm would be in waiting to review MRIP wave 5 harvest information. Staff responded that this data will not be available until mid-December and preliminary 2022 data are not currently considered in the models to estimate 2023 harvest. Preliminary wave 1-4 2022 data were shown in presentations for comparison purposes only. Modeling approaches provide an opportunity to rely less on preliminary current year data, although this information could be included in future model runs if desired.

Black Sea Bass

MC Considerations for using the RDM or RFDM

The MC reviewed figures illustrating how well the RDM and RFDM predicted past MRIP estimates at the coastwide level. As previously stated for scup, the analyses were not conducted in an identical manner across the two models. For example, different time periods were analyzed and the results were presented in different formats. This posed challenges for directly comparing the two models. Both models appeared to predict past MRIP estimates reasonably well.

The RDM overpredicted coastwide harvest and catch in 3 of the 4 years shown. The modeler and MC were not able to provide a clear explanation for this overprediction without additional time to consider it in more detail.

The RFDM produced similar estimates of harvest as the MRIP estimates in most, but not all years. The model notably under-predicted harvest in 2016 and 2017. However, the MRIP estimates in those years were previously identified as outliers due to the outsized influence of single state/wave (and in one case, mode) estimates on the coastwide estimate. The model similarly produced reasonable estimates of discards, with no apparent trend of consistently over or under-predicting across the time period shown.

One of the RFDM modelers noted that the disconnect between the model estimates of harvest and the MRIP estimates for 2016 and 2017 is not unexpected as those MRIP estimates are considered outliers. In fact, this could be an example of how models may be more appropriate to use when

setting measures than using MRIP data alone, especially single-year MRIP estimates. The models may provide better predictions of reality because they consider other information beyond just MRIP data and can consider uncertainty in that information.

The modelers presented an R Shiny app during the meeting to show the MC how estimates of harvest in numbers of fish can be quickly generated based on specified bag, size, and season limits. The version of the tool that was shown to the MC analyzed coastwide measures (i.e., the same measures in all states), which is useful for evaluating the non-preferred coastwide measures that are required under conservation equivalency. The modelers plan to develop a modified version of this tool to allow for specification of variable bag, size, and season limits by state. The MC agreed that this tool is very useful and strongly supported the ability to use this tool on their own to develop state waters measures through the Commission's Technical Committee.

Given the ability of the model to produce harvest estimates which reasonably matched the MRIP estimates in most years, and given the ease of use of the model through the R Shiny app, including future use by the Technical Committee when developing state waters measures, **the MC supported use of the RFDM for setting 2023 recreational black sea bass measures**.

After the MC adopted their recommendation to use the RFDM to set 2023 black sea bass measures, they discussed how the model is currently configured in more detail. For example, recruitment is included as a variable in the model for black sea bass, but lagged by three years (e.g., the 2021 value is 2019 recruitment from the latest stock assessment). This allows the model to consider availability of each year class when they are large enough to start being retained in the fishery.

The RFDM also includes the RHL as a covariate in the black sea bass model, with the rationale that it is a proxy for stock status. Some MC members questioned whether this is an appropriate assumption. One of the RFDM modelers explained that alternative versions of the model using SSB as a covariate instead of the RHL did not produce a logical effect. However, the RHL covariate explained a decent amount of variance in the model. This may be because in the past measures were set based on the RHL and there were often time lags between increases in the SSB and resulting increases in the RHL.

One MC member questioned whether the harvest target based on the 10% reduction would be a better variable to input in the model for 2023, rather than the 2023 RHL, as under the Percent Change Approach, measures will not be set based on the 2023 RHL. Given how the model is currently configured, one of the RFDM modelers said the 2023 RHL would be most appropriate.

As previously noted, the RFDM produces outputs in numbers of fish. The group briefly discussed the need to convert those numbers to pounds to determine which measures achieve the 10% reduction in harvest under the Percent Change Approach. It may be possible to update the RFDM to generate outputs in weight in future years; however, this will not be possible in time for setting 2023 recreational measures.

MC Recommendations for 2023 Measures

The RFDM output of 2023 harvest in numbers of fish under 2022 measures was converted to weight based on the average weight of harvested fish in 2021 (the most recent year of data included in the model). This resulted in a median estimate of 11.96 million pounds of harvested fish, with an 80% CI of 8.17 – 16.81 million pounds. The 2023 RHL of 6.57 million pounds is below the lower bound of this CI. Considering that the most recent estimate of biomass is more than 150% of the target level, **the Percent Change Approach requires a 10% reduction in harvest in 2023**.

This reduction is applied to the estimate of 2023 harvest under 2022 measures. As such, the MC's recommendation for use of the RFDM would result in a 2023 harvest target of 10.76 million pounds.

The MC recommended continued use of conservation equivalency to waive federal waters black sea bass measures in favor of state waters measures in 2023. Based on the RFDM model results, **the current non-preferred coastwide measures would result in harvest exceeding this target level**. The MC discussed how to modify these measures to achieve the appropriate coastwide harvest target. They agreed that **further discussion was needed after the meeting to finalize their recommendation for non-preferred coastwide measures**.

The MC noted that the RFDM results suggest that changing the minimum size limit has a larger impact on harvest than changes to the bag limit or open season. The MC has reached similar conclusions in the past based on analyses of MRIP data. One MC member asked if the RDM showed similar results. The RDM modeler confirmed that this same general trend is evident in the RDM.

The RFDM Shiny app was used during the MC meeting to consider how to change the non-preferred coastwide measures. The results suggested that, compared to the current non-preferred coastwide measures, increasing the minimum size by one inch, decreasing the bag limit by two fish, and closing half of wave 3 and all of wave 5 may achieve the 10% reduction in 2023. However, the RFDM modelers said this may be an overly conservative estimate as the model may need adjustments to ensure no harvest is predicted for closed waves. The modelers agreed to make these adjustments to the model and to provide the MC with updated results over email. They agreed this could be done in time to allow the MC to finalize their recommendations for non-preferred coastwide measures prior to the December 13 Council and Board meeting.

The MC supported the staff recommendation for 2023 precautionary default measures of a 16-inch minimum fish size, a 2 fish possession limit, and an open season of June 1 – August 31.

The MC also had no concerns with Virginia's proposal to open their 2023 February fishery using the same process as prior years to monitor February harvest and make adjustments to the season later in the year as needed.

Public Comments

One AP member asked why the MC hasn't considered his past requests to use a total cumulative length limit with no discards. He would like the MC to state on the record that they prefer dead discards over total utilization.

A staff member of the NEFSC noted that there seemed to be a misconception about how the RDM could be used to set state waters measures. He noted that states will be closely involved in future model runs to analyze state waters measures, even if states can't run the RDM on their own. The staff involved in developing the RDM are committed to working with states to analyze multiple options for state waters measures in a timely manner.

One AP member asked if the RFDM shiny app could be used to generate a starting point for measures, which could then be run through the RDM to further examine the results. Staff indicated that this is a possibility.

Summer Flounder

The MC supported the use of the **RDM for setting 2023 summer flounder measures**, due to model performance, ability to model slot limits, and concern over high confidence intervals resulting from the RFDM.

MC Considerations for Using the RDM

The RDM model performs well for summer flounder. Out-of-sample predictions indicate the model does a better job of predicting summer flounder harvest in general compared to the other species. All model estimates of harvest in pounds fall within the MRIP PSEs. For 2022 data through wave 4, the model is spot on. For harvest in numbers, similarly, the estimates are close. Summer flounder total catch is generally less well predicted, with more underprediction, but results are somewhat similar to MRIP confidence bounds. All results fall within bounds except for 2022 up to wave 4. It was also noted that extensive effort was put into developing and refining this model during the development of the summer flounder management strategy evaluation (MSE).

Some MC members were concerned that if using the RDM, a lot of time and back and forth with modelers would be needed, as the model is currently not set up to be run by others and requires several hours to run. In some states, there is extensive back and forth between state staff, advisors, Board members, Marine Advisory Councils, etc. This occurs throughout the process of developing potential regulations for Board approval, and during the process of selecting a final set of regulations. However, Lou Carr-Harris noted that he is available to do this work, as it is in his contract to work with state managers and the Council/Board throughout the recreational measures process. The MC agreed that one way to make the process of running state measures more efficient would be to share the input spreadsheet for the RDM so that the states can pull together inputs themselves for running through the model. This can be coordinated among the Technical Committee to make things as manageable as possible. It is also possible that MC members can use the **RFDM** (which they will be able to run on their own via the Shiny app) to test different sets of measures to generate ideas for possible adjustments. This could help narrow down the requests for model runs through the **RDM**.

MC Considerations for Using the RFDM

The RFDM is not currently able to explicitly model slot limits, as it works off past data. Because slot limits have not been applied prior to 2022, they cannot be modeled directly. The MC discussed that in the future, once MRIP data on harvest under slot limits are available, the model will be able to handle slot limits. In initial runs of the RFDM, the modelers used a straight 17-inch minimum size for New Jersey which appeared to notably over-predict harvest. Prior to the MC meeting, the modelers tried two different methods of adjusting projected harvest in New Jersey in an attempt to account for the slot limits. However, due to the methods used for these adjustments,[2] confidence intervals could not be calculated for them.

[2] The two methods used to adjust New Jersey's harvest included: 1) Taking total landings at length over 18 inches in 2022 (year with the slot) divided by landings at length over 18 inches in 2021 (no slot). This gives the proportion of landings in that size range that 2022 represents relative to 2021, which is used to calculate the proportional decrease which is applied to the model estimate for NJ. 2) The proportion of harvest at length over 18 inches in 2022 is subtracted from the proportion of harvest over 18 inches in 2021. This is used to calculate the proportional decrease which is applied to the model estimate for NJ. The results of the RFDM runs using these methods resulted in median 2023 harvest estimates of 10.45 or 10.18 million pounds, respectively.

For model performance, the straight retrospective analysis shows that the model does a decent job of predicting harvest, with MRIP harvest point estimates generally falling within the upper and lower quartiles of the model estimates in each year since 2013. However, in some years the model is biased low. An estimate for 2022 generated using partial year data fairly closely matches the MRIP estimates. However, estimates for 2023 jump way up, as the result of New Jersey's regulations being modeled as a 17-inch minimum size as opposed to a slot limit. The out-of-sample predictions (where a single year's worth of data is removed from the model and then that year is predicted by the model) show fairly good results, except for a more notable underprediction of 2017 and overpredictions in 2019 and 2021. For discards, the retrospective analysis indicates that the model does not do a good job of estimating discards in the early years, but does better later on. Similarly, out-of-sample predictions suggested the model better predicted discards in recent years than earlier in the time series.

Several MC members initially leaned toward the RFDM due to the ability of state staff to easily run their own queries on regulations using the Shiny app.[3] As noted above, MC members should still be able to run RFDM queries to inform their selection of model request runs through the RDM.

Several MC members expressed concern that the confidence intervals for summer flounder under the RFDM are very wide (approximately 10-15 million pounds depending on the percentage). All of these encompass the RHL and would result in a 10% reduction, but MC noted that because these intervals were so wide, they are less meaningful for management and it is less clear that a reduction is the appropriate course of action. A few MC members also noted that the RDM for summer flounder seems to perform somewhat better in terms of estimation. In addition, because it is not possible to get a confidence interval from the adjusted 2023 estimates (adjusted for the NJ slot limit), it does not appear that it can be used to determine the appropriate harvest bin under the Percent Change Approach.

MC Recommendations for 2023 Measures

For these reasons, the **MC ultimately supported the use of the RDM for estimating summer flounder** 2023 harvest under status quo measures, as well as for adjusting the measures. The MC also supported the use of an 80% confidence interval, consistent with that applied for scup and black sea bass, for reasons described for those species above. Using the 80% confidence interval around the RDM median harvest estimate of 8.38 million pounds for 2023 under status quo measures, the 2023 RHL (10.62 million pounds) falls above the upper bound of the confidence interval. In combination with summer flounder stock status, this would result in a 10% liberalization under the Percent Change Approach, relative to the 8.38 million pounds. The MC confirmed that the 2023 coastwide harvest target would thus be 9.21 million pounds.

The MC agreed with the staff recommendation for **continued use of regional conservation equivalency for summer flounder to achieve the harvest target in 2023**, using the same regions as adopted in 2022 and as defined in Addendum XXXII.

Under conservation equivalency, the MC also agreed with the staff recommended **non-preferred coastwide measures including a 17.5-inch minimum size, 3 fish bag limit, and open season**

[3] It was noted that while the Shiny app is currently not configured to run regions (combinations of states), it could do so with some changes in coding, or states could combine state results into regional results.

May 1-September 30. As discussed in the staff memo, this is a slightly modified version of a set of measures evaluated in the summer flounder MSE (Management Procedure #6).

The MC recommended status quo **precautionary default measures including a 20-inch minimum size, a 2 fish possession limit, and an open season of July 1-August 31.** The group agreed that these measures were sufficiently restrictive to deter states from adopting measures outside of the agreed upon conservation equivalency guidelines for 2023.

The MC considered the staff recommendation to evaluate two other MSE options for potential application to state waters measures under conservation equivalency. The MC did not recommend pursuing these options at a coastwide level, because some of these measures would not be desirable in certain states and may not allow all states to liberalize equally or at all. The MC instead supported allowing each region the flexibility to modify their regulations as they see fit (within Board guidelines) to achieve a regional harvest target. These harvest targets would be developed based on a 10% liberalization from the RDM results for each state/region. Individual regions could consider measures similar to the MSE measures discussed, if desired.

Public Comments

An Advisory Panel (AP) member sought clarification on the purpose of the harvest target and asked whether the target was derived from the RHL under the revised allocations. Staff responded that while the 2023 RHL, which was based on the revised allocations, is factored into the determination of the appropriate percent change bin, it is not directly used to derive the harvest target.

Another AP member asked why the MC is not using the best available science in applying the concepts of Big Old Fat Fecund Female Fish. He questioned why managers continue to recommend targeting fish over 17 inches knowing they are mostly breeding females. Staff responded that the implications of various size limit approaches was thoroughly explored in the summer flounder MSE, including the impacts to female stock biomass. Different types of size limits that reduce fishing pressure on larger fish, such as slot limits, have been and are currently being considered by managers.

A Board member requested clarification on how measures would be adjusted under MSE Management Procedure #2, which staff recommended the Board consider applying under conservation equivalency. He noted that the measures for New Jersey under this approach look better than New Jersey's current measures. Staff responded that model runs indicate that this set of measures as modeled in the MSE would need to be restricted somewhat in order to not exceed the recommended harvest target. Model runs with tweaks to these measures were not able to be completed prior to the meeting.

Appendix: Percent Change Approach Recommendation Summary

Table 2: Summary of model results and MC recommendations for Percent Change Approach for each species in 2023. Values are in millions of pounds.

Species	Model	Estimated 2023 Harvest Under 2022 Measures	80% CI	2023 RHL	Stock Size Category	Percent Change Approach Requirement	MC Recommendation	Resulting 2023 Harvest Target
Summer Flounder	**RDM** *Recommended by MC for 2023*	**8.38**	**7.56-9.52**	**10.62**	**Low**	**10% liberalization**	**10% liberalization**	**9.21**
	RFDM *Not recommended by MC for 2023*	12.77[a,b]	8.55-18.79[b]			10% reduction	N/A	11.49
Scup	**RFDM** *Recommended by MC for 2023*	**14.42[b]**	**8.95-23.08[b]**	**9.27**	**Very High**	**10% liberalization**	**Status quo *due to AMs***	**14.42**
	RDM *Not recommended by MC for 2023*	17.21	13.56-22.68			10% reduction	N/A	15.49
Black Sea Bass	**RFDM** *Recommended by MC for 2023*	**11.96 [b]**	**8.17-16.81[b]**	**6.57**	**Very High**	**10% reduction**	**10% reduction**	**10.76**
	RDM *Not recommended by MC for 2023*	11.05	10.00 -11.96			10% reduction	N/A	9.95

[a] As described above, the RFDM modelers used two methods to adjust this estimate to account for New Jersey's slot limit. The adjusted values were 10.45 and 10.18 million pounds depending on the method used. There are no confidence intervals associated with these adjusted estimates.

[b] RFDM model results are reported in number of fish and were converted to pounds based on average weight of harvest in 2021 from MRIP.

Table 3: Process for determining appropriate percent change in expected harvest when developing measures under the Percent Change Approach, with Nov. 2022 MC recommendations for each species highlighted in orange (summer flounder), purple (scup), and blue (black sea bass). As described above, a recreational AM has also been triggered for scup indicating that adjustments to measures are needed. **As such, the MC recommended that it is not appropriate to take a liberalization for scup and that measures should remain status quo.**

Column 1 **Future RHL vs Estimated Harvest**	*Column 2* **Biomass compared to target level (SSB/SSB_{MSY})**	*Column 3* **Change in Harvest**
Future 2-year average RHL is **greater than** the upper bound of the harvest estimate CI (harvest expected to be lower than the RHL)	**Very high** (greater than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%
	High (at least the target level, but no higher than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below the target stock size)	**Liberalization**: 10% 
Future 2-year average RHL is **within** harvest estimate CI (harvest expected to be close to the RHL)	**Very high** (greater than 150% of target)	**Liberalization**: 10% 
	High (at least the target level, but no higher than 150% of target)	**No liberalization or reduction:** 0%
	Low (below the target stock size)	**Reduction:** 10%
Future 2-year average RHL is **less than** the lower bound of the harvest estimate CI (harvest is expected to exceed the RHL)	**Very high** (greater than 150% of target)	**Reduction:** 10% 
	High (at least the target level, but no higher than 150% of target)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below the target stock size)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 10, 2022

To: Chris Moore, Executive Director

From: Hannah Hart, Staff

Subject: Scup Recreational Management Measures for 2023

Summary

The information in this memo is intended to assist the Monitoring Committee (MC), Advisory Panels, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) in developing recommendations for scup recreational measures for 2023.

2023 will be the first year that measures will be set using the Percent Change Approach, which is pending implementation through the Recreational Harvest Control Rule Framework/Addenda. Under the Percent Change Approach, recreational measures will no longer aim to achieve but not exceed the recreational harvest limit (RHL). Instead, measures will aim to achieve a different level of harvest, which will be defined based on expectations of 2023 harvest under 2022 measures compared to the 2023 RHL as well as considerations about stock biomass.

Each year, the MC is tasked with recommending recreational management measures (possession limits, size limits, and open/closed seasons) for the upcoming year. For scup, the Council and Board agree to federal waters recreational management measures for the upcoming year that apply throughout federal waters from Maine through North Carolina. State waters measures are typically determined separately through the Commission process; however, the combination of both federal waters and state waters measures must achieve the specified percent change as defined through the Percent Change Approach.

Improved statistical modeling tools are available for setting 2023 measures, including a Recreational Demand Model (RDM) and a Recreational Fleet Dynamics Model (RFDM). The two models are described on page 11. As described in more detail below, the 2023 RHL is below five of six potential confidence intervals (CIs) around estimated 2023 harvest under 2022 measures using the RDM and RFDM. Given the most recent estimate of spawning stock biomass is more than 150% of the target level, the Percent Change Approach requires a 10% reduction in harvest relative to estimated 2023 harvest under 2022 measures.

The MC should recommend 2023 federal waters measures and can also discuss considerations for adjustments to state measures to achieve the 10% reduction in harvest required. Additional RDM and RFDM model runs may be necessary to determine the appropriate 2023 measures needed to achieve the required reduction in harvest. As described in more detail below, the RDM results suggest decreasing the possession limit to 15 fish in state and federal waters is not expected to achieve the required 10% reduction necessary for 2023, and increasing the minimum size limit by 1 inch in state and federal waters would reduce harvest by 24%, which is notably more than the 10% reduction required.

Overview of Percent Change Approach

In June 2022, the Council and the Policy Board approved a new process for setting recreational measures called the Percent Change Approach.[1] They agreed to use this approach for summer flounder, scup, and black sea bass starting with 2023 measures. Under this approach, measures will aim to achieve a specified percent change in harvest compared to the expectation of harvest in the upcoming year(s) under current quo measures. Unlike the previous process, the recreational bag, size, and season limits will no longer aim to achieve but not exceed the RHL. Instead, measures will aim to achieve a different level of harvest, which will vary based on the following two factors:

1) A confidence interval (CI) around an estimate of expected harvest in the upcoming two years under current measures compared to the average RHL for the upcoming two years and
2) Biomass compared to the target level, as defined by the most recent stock assessment.

The resulting percent change in harvest that measures should aim to achieve is summarized in Table 1. Information about how to apply this process to scup for 2023 measures is described in more detail in later sections of the document.

It is worth noting that this process is intended to allow recreational measures to remain unchanged across two years, aligned with the timing of updated management track stock assessments, which are expected to be available every other year. However, measures will be set on a one-year cycle for 2023 given that 2023 is an interim year for the management track assessments. This process will be used for a two-year cycle starting with 2024-2025.

[1] See action documents and additional information at https://www.mafmc.org/actions/hcr-framework-addenda.

Table 1: Process for determining appropriate percent change in expected harvest when developing measures under the Percent Change Approach.

Column 1 **Future RHL vs Estimated Harvest**	*Column 2* **Biomass compared to target level** (SSB/SSB_{MSY})	*Column 3* **Change in Harvest**
Future 2-year average RHL is **greater than** the upper bound of the harvest estimate CI (harvest expected to be lower than the RHL)	**Very high** (greater than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%
	High (at least the target level, but no higher than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below the target stock size)	**Liberalization**: 10%
Future 2-year average RHL is **within** harvest estimate CI (harvest expected to be close to the RHL)	**Very high** (greater than 150% of target)	**Liberalization**: 10%
	High (at least the target level, but no higher than 150% of target)	**No liberalization or reduction:** 0%
	Low (below the target stock size)	**Reduction:** 10%
Future 2-year average RHL is **less than** the lower bound of the harvest estimate CI (harvest is expected to exceed the RHL)	**Very high** (greater than 150% of target)	**Reduction:** 10%
	High (at least the target level, but no higher than 150% of target)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below the target stock size)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%

Past Management Measures

Scup RHLs were first implemented in 1996. Since then, the RHL varied from a low of 1.24 million pounds in 1999 and 2000 to a high of 9.27 which is the expected RHL for 2023. Performance relative to RHLs through 2019 can only be evaluated using pre-revision ("old") MRIP data, since past RHLs were set using assessments that incorporated the previous MRIP time series.

Until 2002, the recreational scup fishery was managed with coastwide measures as dictated by the FMP at the time. These measures included a common minimum fish size, possession limit, and open season that were implemented in both state and federal waters. Since 2003, the Commission has applied a regional

management approach to recreational scup fisheries in state waters, where New York, Rhode Island, Connecticut, and Massachusetts develop regulations intended to achieve 97% of the RHL. Federal waters regulations have been updated occasionally since 2003; however, from 2015 – 2021 federal waters measures remained unchanged (Table 2).

The Council and Board agreed to leave the recreational scup measures in all states and federal waters unchanged in 2020 and 2021 despite expected RHL overages. This was viewed as a temporary solution to allow more time to consider how to fully transition the management system to use of the revised Marine Recreational Information Program (MRIP) data (see the next section of this document for more details), including further development of the then ongoing Commercial/Recreational Allocation Amendment and the Recreational Harvest Control Rule Framework/Addenda.

However, due to recreational overages in 2019-2020 and expected overages in 2021 the Council and Board required a 1-inch increase to the scup recreational minimum size in state and federal waters for 2022. In federal waters, this resulted in a 10-inch total length minimum size limit (Table 2). Management measures in state waters vary by state, mode (e.g., private, for-hire), and season, but like federal waters, the minimum size limit in each state was increased by 1 inch resulting in a 10-inch size limit in most northern states and a 9-inch minimum size limit in most southern states (Table 3). Implementation of the state specific 1-inch minimum size limit increase varied by state, but all states regulations were updated prior to July 1, 2022.

Table 2: Summary of federal management measures for the scup recreational fishery, 1997-2023. ABCs, TACs, ACLs, RHLs, and harvest are in millions of pounds. Recreational harvest values are for Maine through North Carolina and old and revised MRIP estimates are shown.

Year	TAC/ ABC	Rec. ACL	RHL	Rec. harvest (Old MRIP)	% over/ under RHL[a]	Rec. harvest (New MRIP)	Bag limit (# of fish)	Size limit (inches, total length)	Open season
1997	9.10	-	1.95	1.20	-38%	2.54	-	7	1/1 - 12/31
1998	7.28	-	1.55	0.87	-44%	1.82	-	7	1/1 - 12/31
1999	5.92	-	1.24	1.89	+52%	4.63	-	7	1/1 - 12/31
2000	5.92	-	1.24	5.44	+339%	11.39	-	-	1/1 - 12/31
2001	8.37	-	1.76	4.26	+142%	9.77	50	9	8/15 - 10/31
2002	12.92	-	2.71	3.62	+34%	6.23	20	10	7/1 - 10/2
2003	18.65	-	4.01	8.48	+111%	17.21	50	10	1/1 - 2/28 7/1 - 11/30
2004	18.65	-	3.99	7.28	+82%	12.83	50	10	1/1 - 2/28 9/7 - 11/30
2005	18.65	-	3.96	2.69	-32%	4.30	50	10	1/1 - 2/28 9/18 - 11/30
2006	19.79	-	3.99	3.72	-7%	5.93	50	10	1/1 - 2/28 9/18 - 11/30
2007	13.97	-	2.74	4.56	+66%	7.10	50	10	1/1 - 2/28 9/18 - 11/30
2008	9.9	-	1.83	3.79	+107%	5.76	15	10.5	1/1 - 2/28 9/18 - 11/30
2009	15.54	-	2.59	3.23	+25%	6.28	15	10.5	1/1 - 2/28 10/1 - 10/31
2010	17.09	-	3.01	5.97	+98%	12.48	10	10.5	1/1 - 2/28 10/1 - 10/31
2011	31.92	-	5.74	3.67	-36%	10.32	10	10.5	6/6 - 9/26
2012	40.88	31.89	8.45	4.17	-51%	8.27	20	10.5	1/1 - 12/31
2013	38.71	30.19	7.55	5.37	-29%	12.57	30	10	1/1 - 12/31
2014	35.99	28.07	7.03	4.43	-37%	9.84	30	9	1/1 - 12/31
2015	33.77	26.35	6.8	4.41	-35%	11.93	50	9	1/1 - 12/31
2016	31.11	6.84	6.09	4.26	-30%	10.00	50	9	1/1 - 12/31
2017	28.4	6.25	5.50	5.42	-1%	13.54	50	9	1/1 - 12/31
2018	39.14	8.61	7.37	5.61	-24%	12.98	50	9	1/1 - 12/31
2019	36.43	8.01	7.37	5.40[b]	-27%	14.12	50	9	1/1 - 12/31
2020	35.77	7.87	6.51	N/A	+98%	12.91	50	9	1/1 - 12/31
2021	34.81	7.66	6.07	N/A	+174	16.62	50	9	1/1 - 12/31
2022	32.11	7.06	6.08	N/A	-	-	50	10	1/1 - 12/31
2023[c]	29.67	10.39	9.27	N/A	-	-	TBD	TBD	TBD

[a] Based on a comparison with old MRIP estimates through 2019 and new MRIP estimates starting in 2020

[b] Old MRIP estimates provided to the National Marine Fisheries Service Greater Atlantic Regional Fisheries Office by the Northeast Fisheries Science Center

[c] Pending approval and implementation by NMFS.

Table 3: State recreational fishing measures for scup in 2021 and 2022. Note: the minimum size limit was the only regulation updated in 2022 and timing of implementation varied by state.

State	2021 Minimum Size (inches)	2022 Minimum Size (inches)	Possession Limit	Open Season
MA (private & shore)	9	10	30 fish; 150 fish/vessel with 5+ anglers on board	January 1-December 31
MA (party/charter)	9	10	30 fish	January 1-April 30; July 1-December 31
			50 fish	May 1-June 30
RI (private & shore)	9	10	30 fish	January 1-December 31
RI shore program (7 designated shore sites)	8	9		
RI (party/charter)	9	10	30 fish	January 1-August 31; November 1-December 31
			50 fish	September 1-October 31
CT (private & shore)	9	10	30 fish	January 1-December 31
CT shore program (45 designed shore sites)	8	9		
CT (party/charter)	9	10	30 fish	January 1-August 31; November 1-December 31
			50 fish	September 1-October 31
NY (private & shore)	9	10	30 fish	January 1-December 31
NY (party/charter)	9	10	30 fish	January 1-August 31; November 1-December 31
			50 fish	September 1- October 31
NJ	9	10	50 fish	January 1- December 31
DE	8	9	50 fish	January 1-December 31
MD	8	9	50 fish	January 1-December 31
VA	8	9	30 fish	January 1-December 31
NC, North of Cape Hatteras (N of 35° 15'N)	8	9	50 fish	January 1-December 31

Recreational Catch and Harvest Trends

In July 2018, the Marine Recreational Information Program (MRIP) released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology (i.e., a transition from a

telephone-based effort survey to a mail-based effort survey). Recreational data included in this memo reflect revised MRIP data except where otherwise stated.

MRIP estimates for 2020 were impacted by the COVID-19 pandemic due to temporary suspension of the Access Point Angler Intercept Survey (APAIS) and headboat sampling. Some minor impacts continued into 2021. The National Marine Fisheries Service (NMFS) used imputation methods to fill gaps in 2020-2021 data with data collected in 2018 and 2019. For example, the 2020 scup harvest estimate for Maine through Virginia combined was developed using approximately 25% imputed data and the 2021 estimate used 2% imputed data. For additional information, see the information on 2020 recreational harvest estimates posted at: https://www.mafmc.org/council-events/2021/sfsbsb-mc-july27.

Estimates of recreational dead discards in weight for 2020 and 2021 using the typical estimation methods are not currently available. The typical method relies on age and length information that is not currently available for these more recent years. As such, GARFO generated 2020-2021 estimates of dead discards in weight by applying the average weight of discarded fish in 2019 to the estimates of dead discards in number of fish generated by MRIP for 2020 and 2021.[2]

Table 4 provides the annual MRIP time series of recreational harvest (in number of fish and weight), dead discards (in weight), and catch (in number of fish) for 2008-2021, as well as the estimates for waves 1-4 for 2022. Since 1981, estimated recreational scup catch fluctuated from a peak of 37.31 million fish in 1986 to a low of 6.60 million fish in 1997. Estimated harvest fluctuated from a high of 14.18 million pounds (about 30.43 million scup) in 1986 to a low of 1.82 million pounds (about 2.74 million scup) in 1998. In 2021, recreational harvest was about 16.60 million fish (about 16.62 million pounds), and approximately 31.70 million scup were caught, with a release rate of 48% (Table 4).

2022 recreational catch and landings data from MRIP are currently available as preliminary estimates for the first four waves (January – August). Preliminary MRIP estimates indicate that through August 2022, 27.64 million scup were caught and 14.18 million scup (corresponding to about 13.72 million pounds) were harvested from Maine through North Carolina (Table 4). Therefore, even with the increased minimum size limit implemented in 2022, on average, preliminary 2022 wave 1 – 4 estimates are about 3.5 million pounds greater than the 2019-2021 average wave 1 – 4 estimates.

[2] Specifically, the 2019 average weight of discarded fish was calculated using recent assessment update information. This average weight (0.60 lbs.) was applied to the proportion of MRIP live discards in number of fish (MRIP "B2s") that are assumed to die after being discarded (15% for scup).

Table 4: Recreational scup catch (i.e., harvest and live and dead discards) and harvest by year, ME - NC, 2012-2022 based on new MRIP estimates. 2022 values are preliminary and are for waves 1-4 only.

Year	**Catch** (mil of fish)	**Harvest** (mil of fish)	**Harvest** (mil lbs.)	**Dead discards** (mil lbs.)	**% Released (released alive)**	**Avg. weight of landed fish** (mil lbs.)
2012	21.24	7.33	8.27	1.40	65%	1.13
2013	25.79	11.49	12.57	1.25	55%	1.09
2014	20.37	9.17	9.84	1.06	55%	1.07
2015	24.87	11.33	11.93	1.28	54%	1.05
2016	31.49	9.14	10.00	1.90	71%	1.09
2017	41.20	13.84	13.54	2.38	66%	0.98
2018	30.37	14.55	12.98	1.42	52%	0.89
2019	28.67	14.95	14.12	1.23	48%	0.94
2020	27.27	14.49	12.91	1.15	47%	0.89
2021	31.70	16.60	16.62	1.36	48%	0.99
2022 (wave 1-4)	27.64	14.18	13.72	--	49%	0.97

The majority of scup harvest takes place during waves 3-5; however, harvest by state by wave varies across the year. For example, most of the scup harvest in North Carolina takes place during wave 2 and the majority of scup harvest in Rhode Island, Connecticut, and New York occurred during wave 4 (Table 5). Total landings by state in recent years are shown in Table 6, including full year estimates for 2017 – 2021 and wave 1 – 4 estimates for 2022.

On average, recreational scup harvest (in pounds) from 2017 – 2021 accounted for about 6% in federal waters and 94% in state waters (Figure 1). During 2017 – 2021 about 11% of recreational harvest was from party/charter vessels, 28% was from shore-based anglers, and 61% was from private/rental boats (Figure 2).

Table 5: Percent of scup harvest (in weight) by wave for each state in 2019 – 2021, based on MRIP data. Values may not add to 100% due to rounding. North Carolina is the only state in the management unit which conducts MRIP sampling during wave 1.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
ME	--	--	--	--	--	--
NH	--	--	--	--	--	--
MA	0%	22%	43%	20%	15%	0%
RI	0%	0%	19%	44%	36%	1%
CT	0%	0%	23%	43%	33%	0%
NY	0%	0%	32%	42%	25%	2%
NJ	0%	0%	0%	45%	55%	1%
DE	0%	0%	0%	0%	1%	99%
MD	0%	0%	0%	0%	8%	92%
VA	0%	0%	0%	0%	100%	0%
NC	0%	39%	28%	17%	14%	1%
Total	**0%**	**4%**	**29%**	**39%**	**28%**	**1%**

Table 6: Recreational scup harvest (in pounds) by state for all waves (January – December) 2017 – 2021. 2022 values are preliminary estimate through wave 4 (January – August).

State	2017	2018	2019	2020	2021	2022 (w1-4)
ME	0	0	0	0	0	0
NH	2,156	0	0	0	0	0
MA	2,363,922	3,021,958	1,924,202	1,174,791	3,763,515	1,994,630
RI	1,113,035	2,030,259	2,856,461	1,330,398	2,467,933	2,362,071
CT	1,712,421	2,574,308	2,242,549	2,951,959	2,856,535	1,162,622
NY	6,626,059	4,906,041	6,970,872	6,253,478	7,177,771	8,150,145
NJ	1,708,354	443,700	118,832	1,200,942	194,090	47,087
DE	118	362	0	316	1,179	0
MD	6	369	444	578	331	0
VA	0	0	229	0	157,455	0
NC	508	420	2,637	1,346	2,831	1,302
Total	**13,526,579**	**12,977,417**	**14,116,226**	**12,913,808**	**16,621,640**	**13,717,857**

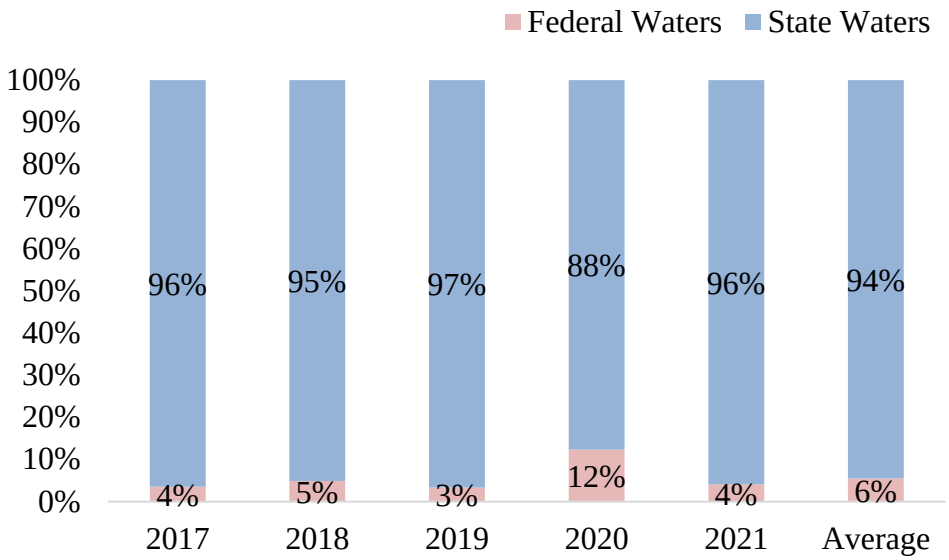

Figure 1: Proportion of 2017 – 2021 recreational harvest (in pounds) in state and federal waters, ME-NC. *Note: area information is self-reported based on the area where the majority of fishing activity occurred on each trip.*

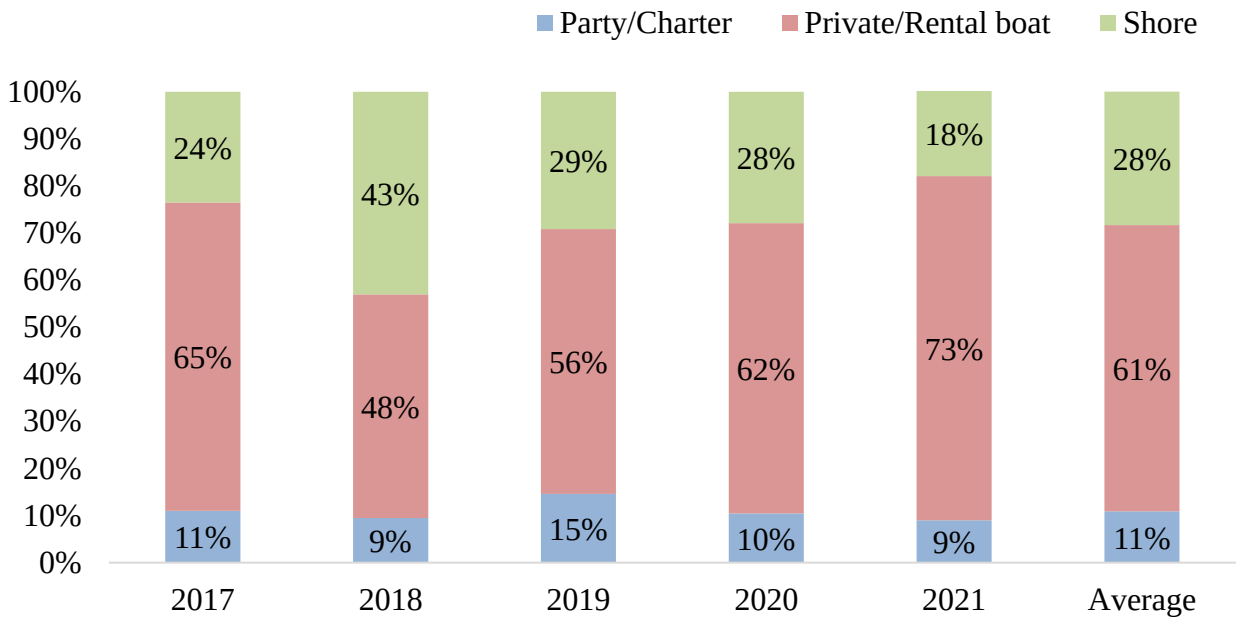

Figure 2: Proportion of 2017 – 2021 recreational harvest (in pounds).

Percent Change in Harvest Needed for 2023

Comparison of 2023 RHL to Expected 2023 Harvest Under Current Measures

As previously stated, 2023 scup recreational measures will be set using the Percent Change Approach. The first step will be to generate an estimate of expected 2023 harvest under status quo (i.e., 2022) measures, with an associated confidence interval, and comparing that CI to the 2023 RHL (i.e., 9.27 million pounds). The Percent Change Approach does not define specific methods for calculating CIs. The MC should provide advice to the Council and Board on the appropriate CI for 2023.

In the past, expected harvest under status quo measures has been estimated by projecting harvest for the current year[3] and assuming that harvest in the following year would remain at similar levels if measures remained unchanged. This year, improved methods of estimating future harvest are available. The Council and Commission have supported development of two statistical models to predict the impacts of recreational bag, size, and season limits on recreational harvest and discards of summer flounder, scup, and black sea bass.

The Northeast Fisheries Science Center has developed the **Recreational Demand Model (RDM)** for these species. The scup version of this model currently accounts for the impacts of regulations, population size, and angler preferences on harvest and discards. Year class strength is based on stock assessment projections and angler preferences are based on a survey of anglers from Maine through Virginia. Additional information about this model can be found in this overview document: https://www.mafmc.org/s/fluke-RDM-overview-final-report.pdf.

Additionally, the **Recreational Fleet Dynamics Model (RFDM)** is being developed by scientists at the Rhode Island Department of Environmental Management and uses a shape constrained additive model to predict harvest and discards based on management measures. Covariates in the model include year, minimum size, wave, state, bag limit, spawning stock biomass, and the RHL. An R Shiny App is being developed for this model to allow the MC to modify management measures and view the resulting predicted harvest and discards. Additional information about this model can found in this overview document: https://www.mafmc.org/s/RFDM_CompleteModel_WriteUps_Oct2022_FinalDraftclean.pdf

Both models allow for consideration of varying management measures at the state and wave level. Both models were reviewed by the Council's Scientific and Statistical Committee in September 2021[4] and have been improved since that time based on their recommendations.

Table 7 shows RDM and RFDM estimates of 2023 scup harvest under 2022 measures as well as associated CIs. Model results suggest that under 2022 measures, projected harvest in 2023 would be 17.21 million pounds using the RDM and 16.84 million pounds using the RFDM. The 2023 RHL is **below** the lower bound of the 2023 harvest estimate CI under all but one of the six CIs shown in Table 7 (i.e., harvest is expected to be greater than the RHL). Under a 95% CI, results from the RFDM suggest the 2023 RHL is greater than only a very small proportion of the lower

[3] Staff typically project current year harvest using preliminary wave 1-4 data and assuming the same proportion of catch and landings by wave as in the previous year (with some adjustments to this methodology as appropriate).
[4] The final report from the SSC review is available at https://www.mafmc.org/s/05_Rec-Model-Peer-Review-Reports.pdf.

bound of the CI (Table 7). This is the widest of the CIs shown in Table 7 and may not be appropriate for use in management under the Percent Change Approach.

Council staff recommend use of the 80% CI and caution against use of the higher percentage CIs shown in Table 7. The Recreational Harvest Control Rule Framework/Addenda Fishery Management Action Team/Plan Development Team (FMAT/PDT) recommended use of an 80% CI under the Percent Change Approach based on an analysis of several years of MRIP data for each species. The FMAT/PDT agreed that an 80% CI would be appropriate in this context given variability in MRIP data from year to year, even under unchanged measures. A higher percentage CI would result in a wider range of values, which may not be appropriate given how the CI would be used in management under the Percent Change Approach. The FMAT/PDT made this recommendation prior to availability of preliminary results from the RDM and RFDM. Considerations about variability and uncertainty in projections of future harvest may differ under these models (e.g., as more variables are incorporated); however, because MRIP is a primary data source in these models, the rationale behind the 80% CI is still appropriate. In addition, the RDM and RFDM are expected to generate more accurate predictions of harvest compared to past methods, as they use a statistical modeling approach to account for more variables than the MC has traditionally been able to consider when using only MRIP data. Therefore, it would not be appropriate to use a CI resulting in a wider range of values than the 80% CI recommended by the FMAT/PDT based on their analysis of MRIP data.

Under a higher percent CI, the wider range of values is more likely to encompass the "true" harvest, but this also creates a range around a harvest estimate which is less meaningful for management. For example, the very wide ranges of expected harvest under the 95% CIs may not be realistic estimates of 2023 harvest. This creates a higher likelihood of ending up in a Percent Change Approach bin which is inappropriate for the "true" harvest. This could result in a required liberalization when a reduction is more appropriate, or vice versa, depending on the circumstances. A lower percentage CI may be especially appropriate for 2023 given this is the first year of using these models and applying the Percent Change Approach.

Based on how the values shown in Table 7 would be used under the Percent Change Approach (Table 1), five of the six CIs would result in the same outcome for scup in 2023 (i.e., a 10% reduction).

For all these reasons, **staff recommend using an 80% CI in the Percent Change Approach for 2023.** Staff recommend use of the same percentage CI across summer flounder, scup, and black sea bass for 2023. In addition, staff recommend the MC have additional discussions in 2023 to develop a more consistent approach to application of CIs under the Percent Change Approach for all applicable species in future years.

Table 7: RDM and RFDM estimates of 2023 harvest under 2022 measures and associated CIs. All values are in millions of pounds. The RFDM provides estimates in numbers of fish, which were converted to pounds based on average weight of harvested fish in 2019 from MRIP data.

Model	Model estimate for 2023 harvest	95% CI	90% CI	80% CI	2023 RHL
RDM	17.21 (median)	10.75 – 26.68	11.98 – 24.94	13.56 – 22.68	9.27
RFDM	16.84 (median)	8.21 – 31.38	9.38 – 28.10	10.73 – 25.68	

Scup Stock Status

According to the 2021 management track stock assessment[5] scup is about 2 times greater than the target stock size (estimated at 196% of the spawning stock biomass target). This put scup in the **"very high"** stock size category for the percent change approach (Table 1, Column 2).

Resulting Percent Change and Harvest Target

Applying the expected harvest under status quo measures using 5 of the 6 CIs shown in Table 7 and the most recent stock status results in a **10% reduction** in harvest for scup for 2023 (Table 1, Column 3). This change in harvest is relative to projected 2023 harvest under 2022 measures. Assuming the projected 2023 harvest under 2022 measures referenced above (17.21 or 16.84 million pounds), the **resulting harvest target for scup in 2023 would be about 15.49 million pounds or 15.16 million pounds depending on the model used.**

The MC should provide recommendations to the Council and Board on which harvest target is most appropriate. This should include a recommendation for a preferred model for 2023 (i.e., the RDM or RFDM), if appropriate. In making these recommendations, the MC should consider how the models may be used in subsequent steps of the measures setting process, including for setting state waters measures. Given that the two models produce slightly different results, it may not be appropriate to use one model for some parts of the process and the other model for subsequent steps.

As described in the staff recommendation section below, further model runs are needed to evaluate the management measures which may be appropriate to achieve these target levels of harvest. Additional information may be available prior to the November 15, 2022 MC meeting.

Accountability Measures

Federal regulations include reactive accountability measures (AMs) for when the recreational scup ACL is exceeded. This can include paybacks of ACL overages depending on stock status and the magnitude of the overage, as described below. ACL overages in the recreational fishery are evaluated by comparing the most recent 3-year average recreational ACL to the most recent 3-year average of recreational dead catch (i.e., landings and dead discards). If average dead catch exceeds the average ACL, then the appropriate AM is determined based on the criteria listed below. This reflects minor revisions to the AMs made through the Recreational Harvest Control Rule Framework/Addenda.

1. If the stock is overfished ($B < ½ B_{MSY}$), under a rebuilding plan, or the stock status is unknown: The exact amount, in pounds, by which the most recent year's recreational ACL has been exceeded, will be deducted in the following fishing year, or as soon as possible once catch data are available. This payback may be evenly spread over two years if doing so allows for use of identical recreational management measures across the upcoming two years.

[5] 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: https://www.nefsc.noaa.gov/saw/reports.html

2. If biomass is above the threshold, but below the target (½ B_{MSY} < B < B_{MSY}), and the stock is not under a rebuilding plan:
    - If only the recreational ACL has been exceeded, then adjustments to the recreational management measures (bag, size, and seasonal limits) would be made in the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measures and the conditions that precipitated the overage.
    - If the most recent estimate of total fishing mortality exceeds F_{MSY} (or the proxy), then an adjustment to the recreational ACT will be made as soon as possible as a payback that will be scaled based on stock biomass. The calculation for the payback amount in this case is: (overage amount) * $(B_{msy}-B)/½\ B_{msy}$. This payback may be evenly spread over two years if doing so allows for use of identical recreational measures across the upcoming two years. If an estimate of total fishing mortality is not available for the most recent complete year of catch data, then a comparison of total catch relative to the ABC will be used.
3. <u>If biomass is above the target (B > B_{MSY}):</u> Adjustments to the recreational management measures (bag, size, and seasonal limits) would be considered for the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measures and the conditions that precipitated the overage.

Based on a comparison of 2019-2021 average recreational dead catch to the 2019-2021 average ACLs, recreational AMs have been triggered for scup (Table 8). Given scup biomass is above the biomass target, the regulations require adjustments to the recreational measures. The regulations do not specify how the measures should be modified.

Recreational measures for scup were restricted in 2022 with the goal of reducing harvest by 33% compared to 2019-2021 average harvest. These restrictions included a 1-inch size increase to the minimum size limit in federal and state waters and were made in response to RHL and recreational ACL overages in prior years. These changes were not expected to prevent an RHL overage in 2022, and instead were intended to bring harvest closer to the RHL while considering resulting socioeconomic impacts if the full reduction was applied. These restrictions are not accounted for in the 2019-2021 comparisons which triggered an AM for 2023. The impacts of the 2022 restrictions on harvest cannot be fully evaluated with currently available preliminary partial year MRIP data. It is also worth noting that several states did not implement the restrictions until mid-year in 2022; therefore, the restrictions may not have their full intended effect in 2022.

On October 20, 2022, the NMFS Greater Atlantic Regional Fisheries Office Regional Administrator sent a letter to the Council stating that given actions taken by the Council and Commission over the past year, including revisions to the commercial/recreational allocation, the 1-inch increase in the recreational minimum size limit in federal waters and in all states for 2022, and final action on the Recreational Harvest Control Rule Framework/Addenda, no additional action, beyond changes which may be required through the Percent Change Approach, is needed to address the triggering of an AM for scup.

As noted above, based on the results of the RDM and RFDM using an 80% or 90% CI, the Percent Change Approach will require a 10% reduction in scup harvest in 2023 compared to estimated 2023 harvest under 2022 measures. Given all these considerations, Council staff recommend that no additional restrictions beyond this 10% reduction be implemented for scup in 2023 due to the triggering of an AM.

As previously described, Council staff think it would be inappropriate to use a 95% CI. In addition to the concerns previous described, use of a 95% CI would result in a 10% liberalization under the Percent Change Approach, which may not be justifiable given the triggering of AMs.

Table 8: Evaluation of scup recreational AMs using the 2019-2021 average recreational ACL compared to the 2019-2021 average recreational dead catch.

	Recreational Harvest (mil lbs.)	Recreational Dead Discards (mil lbs.)	Total Dead Recreational Catch (mil lbs.)	Recreational ACL (mil lbs.)	% Over/ Under ACL
2019[a]	5.41	0.41	5.82	8.01	-27%
2020	12.91[c]	1.15[b]	14.06	7.87	+79%
2021	16.62	1.36[b]	17.98	7.66	+135%
Average	11.65	0.97	12.62	7.85	+61%

[a] Old MRIP estimates provided to the National Marine Fisheries Service Greater Atlantic Regional Fisheries Office by the Northeast Fisheries Science Center

[b] 2020 recreational estimates were developed using imputation methods (incorporating 2018 and 2019 data) to account for missing 2020 APAIS data.

[c] As noted above, recreational dead discards in weight are typically provided by the NEFSC and are calculated using the same methods as the stock assessments for each species. Due to data availability issues, dead discards for 2020-2021 could not be calculated using the typical methods and instead were generated using alternative methods.

Staff Recommendation for 2023 Measures

The MC is tasked with developing recommendations for recreational bag, size, and season limits for federal waters for 2023. The MC may also consider what adjustments may be needed to state measures; however, state waters measures will be developed separately through the Commission process. As described above, state and federal waters measures should collectively achieve the 10% reduction required under the Percent Change Approach.

As previously stated, in December 2021, the Council and Board proposed a 1-inch size increase in federal and state waters. This change was later implemented in 2022 and prior to this, federal scup recreational measures had remained the same for many years (Table 2). **Staff recommend avoiding further size limit increases in 2023**, as the effectiveness of the 2022 increase has not yet been evaluated. In addition, leaving size limits unchanged would allow more time for anglers to adjust to the recently implemented 1-inch increase coastwide and help avoid additional regulatory confusion. Another increase to the minimum size limit would also increase the minimum size limit to 11 inches in federal waters which is a relatively large compared to when about 50% of scup reach maturity which is estimated to be around 7 inches. [6]

Reducing harvest through seasonal closures could be considered but may not be ideal in federal waters and many states since it would require significantly shortening the season or implementing a split season (mid-year closure) to achieve any sort of meaningful reduction in harvest. Currently, the scup recreational fishery is open year-round in federal waters and in most states. Based on 2019-2021 estimates, waves 3-5 comprise approximately 99% of the total recreational scup harvest (Table 5). The proportion of harvest by wave differs across the states, with some states harvesting the majority of their scup in one wave while other states harvest scup more evenly across multiple waves. Because of this, seasonal closures in federal waters could

[6] 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: https://www.nefsc.noaa.gov/saw/reports.html

disproportionately impact some states depending on the percent of each state's harvest from federal waters by wave (Table 5 and Table 6). Reductions to harvest through seasonal closures may be more appropriately applied at the state or regional level.

The majority of anglers do not keep a full bag limit and considerations for a decreased possession limit may be appropriate at this time. Federal waters and the majority of states have a recreational possession limit of 50 or 30 fish. Currently, several states have a "bonus wave" for the party/charter sector with a higher bag limit and states could consider how best to adjust these seasonal limits.

To better inform adjustments needed to achieve a 10% reduction, staff requested additional analysis using the RDM. Similar analysis can also be accomplished using the RFDM; however, due to timing constraints and ongoing work to update the RFDM with 2021 data based on MC feedback, those results are not included in this document. The two set of measures shown in Table 9 were requested and because the RDM cannot analyze federal waters measures separate from state waters measures, the set of measures were treated as if regulations were adopted in both state and federal waters.

The first set of measures (Scup 1) looked at a decrease in the recreational possession limit to 15 fish coastwide (from the current 30 or 50 fish; see Table 3). The results from Scup 1 estimated 2023 harvest would be about 16.28 million pounds. This represents an 5.4% reduction compared to projected 2023 harvest under 2022 measure (17.21 million pounds; Figure 3).

The second set of measures analyzed (Scup 2) looked at a 1-inch increase to the minimum size limit coastwide (from the current 9 or 10 inches depending on the state; see Table 3). Although staff recommend against considering size limit increases for 2023, as described above, this model run was requested to evaluate the magnitude of harvest change and to inform MC discussion of potential options. Scup 2 estimated 2023 harvest would be about 13.22 million pounds which results in about a 24% reduction in harvest compared to projected 2023 harvest under 2022 measures (Figure 3).

Because Scup 1 was below the required 10% reduction, **staff recommend that either a) the MC evaluate a coastwide possession limit of less than 15 fish that would achieve the full 10% reduction, or b) the MC recommend a coastwide 15 fish possession limit with additional adjustments to state waters measures made through the Commission's process to achieve the full 10% reduction.** It is important to note that like the RDM, the RFDM is also not capable of analyzing federal waters measures separate from state waters measures so any additional measures recommended will have to consider changes to both federal and state waters.

Table 9: Set of measures evaluated for scup to assess 2023 measures that would achieve a 10% reduction in harvest relative to the estimate of 2023 harvest under 2022 measures.

Set of Measures	Minimum Size (inches)	Possession Limit	Season
Scup 1	Status quo (2022 measures; 9 or 10 inches depending on state; see Table 3)	15 fish	Open year-round
Scup 2	1-inch increase in state and federal waters	Status quo (2022 measures; 30 or 50 fish depending on state and mode; see Table 3)	Open year-round

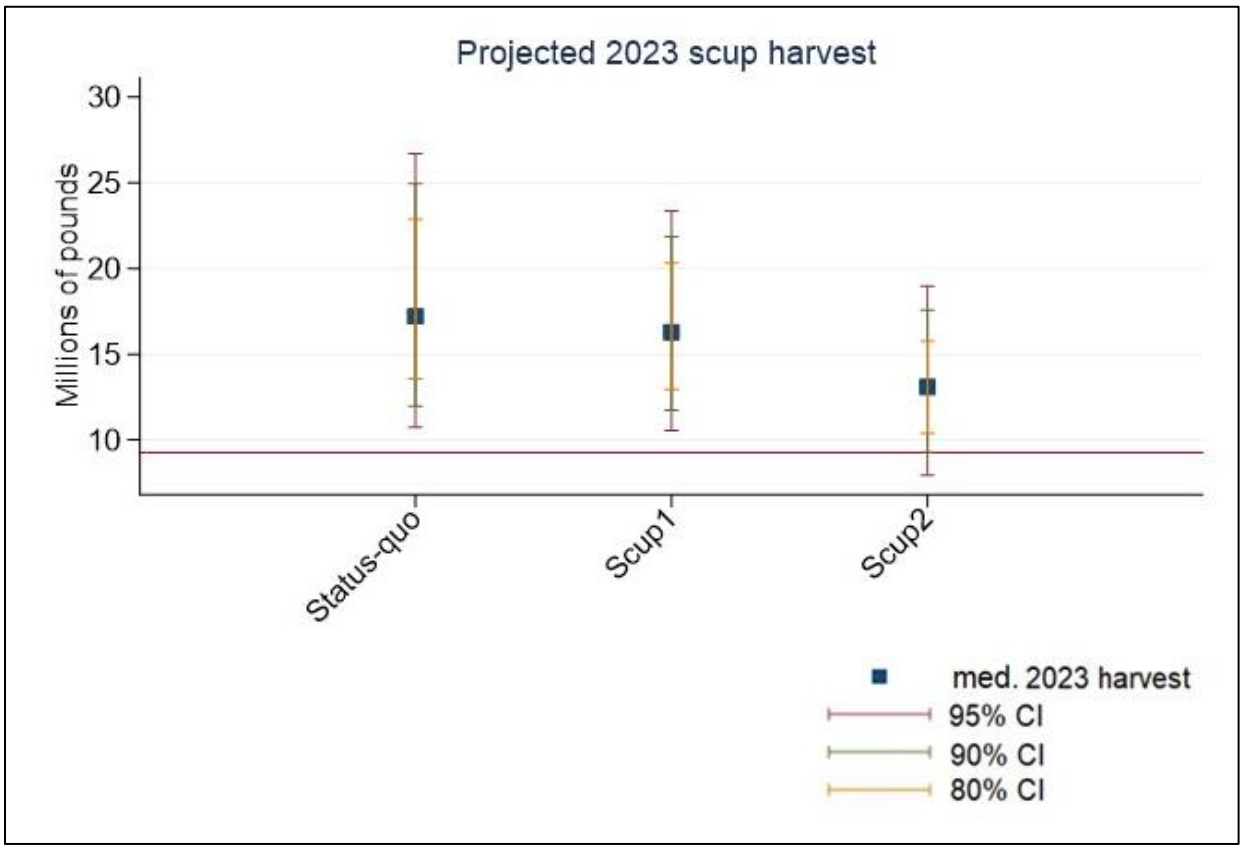

Figure 3: Projected 2023 scup harvest under different set of measures. Status quo represents 2022 scup measures that are currently in place. Scup 1 and Scup 2 represent the set of measures used to evaluate the reduction in projected 2023 scup harvest compared to 2022 scup regulations as described in Table 8. Projected 2023 scup under each scenario is shown using a 95%, 90%, and 80% confidence interval. The red horizontal line on the graph represents the 2023 RHL (9.27 million pounds).

Summer Flounder, Scup, and Black Sea Bass Monitoring Committee
Webinar Meeting Summary
October 26, 2022

Monitoring Committee Attendees: Tracey Bauer (ASMFC), Julia Beaty (MAFMC), Peter Clarke (NJ DFW), Kiley Dancy (MAFMC), Lorena de la Garza Hernandez (NC DMF), Steve Doctor (MD DNR), Alexa Galvan (VMRC), Hannah Hart (MAFMC), Emily Keiley (NMFS), Dustin Colson Leaning (ASMFC), John Maniscalco (for Rachel Sysak; NY DEC), Mark Terceiro (NEFSC), Corinne Truesdale (RI DFW), Greg Wojcik (CT DEP), Rich Wong (DE DFW)

Other Attendees: Katie Almeida, Chris Batsavage, Alan Bianchi, Lou Carr-Harris, Joe Cimino, Geret DePiper, Greg DiDomenico, James Fletcher, Jeff Kaelin, Kathryn, Meghan Lapp, Jason McNamee, Brandon Muffley, Willow Patten, Marisa Ponte, Will Poston, Scott Steinback

The Summer Flounder, Scup, and Black Sea Bass Monitoring Committee (MC) met via webinar on Wednesday, October 26, 2022 to review the Percent Change Approach for setting recreational measures, accountability measures, outcomes of the Summer Flounder Management Strategy Evaluation, and two statistical models which will be available for setting 2023 recreational measures for all three species (i.e., the Recreational Demand Model and the Recreational Fleet Dynamics Model).

Briefing materials considered by the Monitoring Committee are available at: https://www.mafmc.org/council-events/2022/summer-flounder-scup-and-black-sea-bass-monitoring-committee.

Percent Change and Accountability Measures

Council staff presented an overview of the Percent Change Approach which was approved by the Council and the Policy Board through the Recreational Harvest Control Rule Framework/Addenda. This approach will be used to set 2023 recreational bag, size, and season limits for summer flounder, scup, and black sea bass.

Council staff also noted that a recreational accountability measure (AM) was triggered for scup and black sea bass due to an overage of the average 2019-2021 annual catch limits. The NMFS Greater Atlantic Regional Fisheries Office (GARFO) sent a letter to the Council which stated that, given actions taken by the Council and Board over the past year, no additional action is needed to address the AM for scup or black sea bass.

The MC discussed the intersection between the AMs and the Percent Change Approach. It was noted that the Percent Change Approach and the AMs work together. One does not supersede the other. Additional discussion will take place during the November 15 MC meeting when the group will finalize their recommendations for the percent change in harvest needed for 2023.

Summer Flounder Management Strategy Evaluation (MSE)

Council staff provided an overview of the recently completed Summer Flounder MSE. The MSE evaluated the biological and economic benefits of minimizing recreational summer flounder discards and converting discards into landings, as well as identify management procedures to effectively realize these benefits. Council staff asked the MC for feedback on how to apply the result of the MSE to development of 2023 recreational measures, and additionally how the MSE could be applied in future recreational management considerations. The MSE management procedures (options for bag, size, and season limits) were intended to be illustrative of general management concepts and not designed specifically for 2023; therefore, the specifics of the options would likely need modification for 2023 depending on the percent change in harvest needed for summer flounder. MC feedback included:

- The MC agreed that it may be worth further exploring only the management procedures that preformed notably better than the 2019 measures (referred to as status quo measures in the MSE). For example, Management Procedure 3 (status quo regions, modified season of April 1-October 31) performed similarly to the 2019 measures and therefore may not warrant further consideration.
- The results of the management procedures which included coastwide measures can help inform selection of coastwide measures, either as the preferred set of measures or as non-preferred coastwide measures under conservation equivalency.
    - However, one MC member questioned how much support there might be for true coastwide measures and noted that it may be difficult to apply some of the evaluated management procedures given the variation in performance across states.
    - Management Procedure 8 (true slot limit, 3 fish possession limit between 16-20 inches from May 1-September 30) may not be a viable option for coastwide measures. For example, anglers in New Jersey and Virginia have voiced support for allowing harvest of some fish larger than the slot limit. This option also had a slightly increased risk of overfishing compared to other options. Although this approach had some benefits, some MC members said the benefits did not seem to justify the slightly increased risk of overfishing.
- One MC member recommended reorganizing the state specific results in geographic order to more easily evaluate of how well each set of measures performed on a latitudinal/regional basis (i.e., north vs. south) which may help inform considerations for regional measures.
- One MC member asked if the impacts would differ from those presented if the implemented management procedure varied by state. Given that most management procedures outperformed 2019 measures, a mixed approach may still have benefits. However, this has not yet been evaluated.
- Some MC members questioned the realism of some management procedure results. For example, one MC member said it does not necessarily seem logical that under a reduced minimum size with no other changes (Management Procedure 2) the stock size would increase over time.
    - Staff responded that the stock doesn't grow under this management procedure but rather hovers around B_{MSY}. Hypothetically, decreasing the minimum size under Management Procedure 2 would shift recreational selectivity and likely lower the F_{MSY} proxy.

- Measures like the slot option can also change selectivity, focusing mortality on a narrower range, which generally pushes the stock lower relative to the biomass reference point.

Recreational Demand Model

Lou Carr-Harris (Northeast Fisheries Science Center; NEFSC) presented on the Recreational Demand Model (RDM), which has been developed for all three species. The RDM uses data from the NEFSC's 2022 Angler Choice Experiment Survey, Marine Recreational Information Program (MRIP) data, volunteer angler data, NOAA's 2016-2017 National Marine Recreational Fishing Expenditure Survey data, and statistical catch at age frequencies from the NEFSC stock assessments for all three species. The 2022 Angler Choice Experiment Survey provides data to estimate anglers' likelihood of taking a fishing trip based on the numbers of various species they would be expected to retain and discard as well as trip costs. The RDM couples anglers' estimated preferences with projections of availability of different size classes based on the most recent stock assessment and simulates projections for harvest under a specified set of management measures. This model was used to generate preliminary estimates of 2023 harvest and discards in weight under current measures for each species.

Questions and feedback from the MC were as follows:

- In addition to estimating harvest and discards, the RDM can also estimate angler welfare under modeled regulations (derived from the estimated willingness to pay for a particular trip). An MC member asked how sensitive the results were to input parameters, for example, cost per trip which has changed over time, as well as how the satisfaction values were calculated.
    - In the model, angler satisfaction or "utility" is calculated using (1) the estimated utility parameters from the behavioral model and (2) the expected catch and trip costs. This utility value is then translated to a probability of taking a trip. Angler satisfaction is not expressed as a percent satisfied value out of 100. For the cost per trip, while the presentation mentioned an example which was representative of the average trip across all modes, the simulation model actually draws from a wider distribution of variable trip costs. Trip costs derived from the 2017 marine expenditure survey and used in the model will be adjusted for inflation in subsequent model runs.
- The MC was interested to know how angler preferences have changed over the two angler choice surveys (i.e., the 2010 survey used in the first iteration of this model and the 2022 survey used in the recent update). Lou responded that a thorough comparison has not yet been completed. Preferences changed slightly, but the species rankings did not change (i.e., summer flounder was the most valuable, followed by black sea bass, then scup). The survey methods also varied slightly across the two surveys (e.g., the 2010 survey was conducted as an add-on to the shoreside intercept survey and had four versions across different regions that varied in the species presented to survey respondents, while the 2022 survey was conducted as a separate online survey and was uniform across regions).
- Discussion between the MC and the modelers clarified a few things about the configuration of the model:
    - The RDM incorporates information about the probability of taking a trip from the Angler Choice Experiment Survey. These probabilities are affected by the keep and release ratios for all fish. For example, the probability of taking a trip for

summer flounder considers the likelihood of catching scup and black sea bass as well. The regulations for all three species are interactive in terms of their effect on angler behavior.
    - The RDM does not incorporate preliminary 2022 MRIP data. The projections of 2023 harvest do not account for preliminary wave 1-4 2022 data and are calibrated on 2021 data.
    - The MC briefly discussed the weight/length relationships used in the RDM and recommended no changes. However, since the October 26 committee meeting, more recent black sea bass weight/length relationship data has been obtained and incorporated into the model.
- The MC discussed the need to consider confidence intervals and how they apply to the percent change approach. Based on preliminary RDM results presented at the meeting for estimated 2023 harvest, it was expected that most configurations of a confidence interval would result in the 2023 RHL falling outside (above for summer flounder and below for scup and black sea bass) that interval of expected harvest for all three species.
    - Lou clarified that the range of preliminary results presented may be narrower for black sea bass than the other species because the black sea bass results do not yet account for projected 2023 numbers at age and the associated uncertainty in those projections. It may be possible to incorporate these stock projections and provide revised results for the next MC meeting.
- The MC considered whether the model assumption that 100% of 2023 ABC would be caught is appropriate for all three species. The group agreed that this assumption is appropriate given challenges in predicting commercial and recreational dead catch. For example, although the scup and black sea bass recreational ACLs have recently been exceeded, there is not yet enough information to determine how the recently implemented restrictions in measures and other factors are impacting catch in 2022. In addition, the commercial ACLs have not been fully caught for these species in recent years. Both commercial and recreational catch are challenging to predict as they are impacted by a variety of factors other than management measures (e.g., market factors, availability, weather).

Recreational Fleet Dynamics Model

Corinne Truesdale and Jason McNamee (Rhode Island Department of Environmental Management) presented on the Recreational Fleet Dynamics Model (RFDM) for summer flounder, scup, and black sea bass. The RFDM is a shape constrained additive model that can be used to predict future harvest or discards based on historical recreational management measures and stock status variables. Stock status variables included spawning stock biomass, a lagged recruitment variable, and/or the RHL. For each species, discards and harvest were modeled separately. The variables included in each model varied based on which variables best fit the data and some modeler choices about the most logical variables to include. The model can simulate how state or coastwide level adjustments in bag, size, and season limits may affect landings and discards for each species. This model was used to generate preliminary estimates of 2023 harvest and discards (in numbers of fish) under current measures for each species.

The MC discussed the following considerations regarding the RFDM:

- The RFDM currently produces estimates in number of fish.

    - The model could be updated to pounds; however, this would be time consuming as it would require reconstruction of the model framework and datasets.
        - This would also require additional considerations about how to convert discards into weight because MRIP does not generate estimates of discards in weight.
        - It may be possible to make these revisions in a future year; however, given time constraints, it will not be possible to make these revisions in time for setting 2023 measures.
        - However, the model can still be used for 2023 with outputs in numbers of fish. The outputs in numbers of fish could be converted to weight using the average weight of landed and discarded fish.
- One MC member noted that the model results suggest increases in the black sea bass minimum size have been unsuccessful at constraining harvest, which is likely due to recent high availability.
    - Jason agreed with this comment and noted the model for black sea bass was particularly tricky which is why they truncated the dataset to better capture the current fishery.
    - For black sea bass discards, the model results show that increasing the minimum size initially increases discards up to a certain size limit, then beyond that size starts to decrease discards.
    - These harvest and discard results are likely an effect of the populations being so large during time periods when higher minimum size limits have been used, which is likely generating high harvest and discard numbers overall.
- The same MC member asked if the model showed any noticeable response in discards and harvest to changes in bag limits.
    - Jason noted that for black sea bass, increases in bag limits behave intuitively, with higher bag limits driving discards down.
- The RDFM can show outputs aggregated at the wave/state/year level.
    - It may be worth comparing the methods states typically use to set measures to the model results. However, this may require doing something similar to what the MSE team did to understand comparisons in a meaningful way, which will not be feasible for 2023.
        - Trying to mathematically recreate the approach used in recent years for setting measures is difficult but theoretically possible.

Continued Monitoring Committee Discussion and Next Steps

- One MC member said it will be important to use the same model through the entire process of determining how to adjust recreational measures. The use of one model for the first step and then switching to the other model for the next step may not be appropriate since the models could result in different outcomes at any step within the process.
- Another MC member agreed and said the MC, Council, and Board should select which model to use based on a clear justification, and evaluation of which model performs better, as opposed to a preferable outcome.
- The RFDM does not include 2020 and 2021 data. MC members voiced support for adding 2021 data but felt excluding 2020 data was appropriate given 2020 recreational harvest estimates were impacted by temporary suspension of shoreside intercept surveys due to the COVID-19 pandemic. NMFS used imputation methods to fill gaps in 2020

catch data with data collected in 2018 and 2019. Some imputation was necessary in 2021, but to a much lesser extent than in 2020.

- The modelers asked the MC for advice on a more fitting name for the Recreational Fleet Dynamics Model.

Public Comment

- An Advisory Panel (AP) member asked for clarification on the GARFO letter related to AMs and the agency's statement that no further reduction to recreational measures is needed.
    - The GARFO representative on the MC explained that more restrictive measures were put in place in 2022 due to overages in 2020 and 2021. The impacts of these adjustments have not yet been evaluated given incomplete 2022 data. The agency is not saying measures in 2023 should necessarily remain status quo, given the Percent Change Approach may call for a reduction. However, the previous (2022) reductions will satisfy the requirement of the AMs and no additional action beyond the specified percent change is needed because of the AMs.
- An AP member asked if there is any analysis that shows the number of times an angler has been surveyed or the number of times an angler retained a bag limit.
    - These data may exist in the MRIP intercept data, but it can get complicated since an intercept is often a boat of multiple anglers. The RDM produces trip-level estimates of harvest; however, the RFDM does not.
- An AP member commented that as the MC moves through this process it will be interesting to reconcile the need to reduce catches and high bag limits if those bag limits are usually not achieved.
- An AP member asked how the for-hire data used in the RDM were collected.
    - The 2022 Angler Choice Experiment Survey asks how many trips anglers took by charter, private, party, from shore, so there is some mode information. However, the for-hire mode is not modeled separately in the RDM.
- An AP member asked if the MSE analyzed which management procedures would best prevent overages, overfishing, and reduce discards.
    - Results demonstrate that some of the analyzed Management Procedures could reduce discards, and result in an increased abilities to retain fish. The analysis focused on catch in reference to overfishing reference points but did not examine performance compared to Recreational Harvest Limits or ACLs.
- A commercial fishing industry representative mentioned that New Jersey's summer flounder slot limit seems to be working well and asked if the MSE or any of the model's presented today could help analyze the effects of a slot limit including smaller sizes (e.g., reducing the lower bound of the slot to 16 inches) to see if it would further reduce discards.
    - This could be considered. It is up to individual states and regions to come up with measures to achieve the percent change required. It was also noted that the MSE has state specific results and one option evaluated was similar to New Jersey regulations.
- An AP member asked how the 2019-2021 overages which triggered an AM for scup and black sea bass compare to the ACLs under the recently revised allocations.

- The 2023 ACLs and RHLs account for the revised allocations. These ACLs could be compared to 2019-2021 catch based on information provided in the briefing materials for this MC meeting. However, this comparison will not be used to determine 2023 measures. Staff clarified that the process for setting 2022 measures will consider how expected 2023 harvest under 2022 measures compares to the 2023 RHLs.

Kiley Dancy

From: Hart, Hannah
Sent: Tuesday, November 29, 2022 1:25 AM
To: Beaty, Julia; Kiley Dancy
Subject: Fwd: Upcoming Advisory Panel meeting - 11/30/2022

From: James Fletcher <unfa34@gmail.com>
Sent: Monday, November 28, 2022, 11:17 PM
To: Hart, Hannah <hhart@mafmc.org>; Moore, Christopher <cmoore@mafmc.org>; Michael A. Poon <MPoon@pacificlegal.org>
Subject: Re: Upcoming Advisory Panel meeting - 11/30/2022

I HATE TO BE DUMB BUT! Why is Council promoting discards and killing the largest most reproductive females fish ?
IS NOT BOFFFF ***BIG OLD FAT FECUND FEMALE FISH "BEST SCIENCE"?***
DOES NOT A TOTAL LENGTH TO BE RETAINED WITH NO DISCARDS COMPLY WITH MANGUSON ACT.?
WHEN WILL COUNCIL COMPLY WITH MANGUSON? Summer Flounder Scup Black Sea Bass or all species
James Fletcher

Kiley Dancy

From: Moore, Christopher
Sent: Tuesday, October 25, 2022 8:58 AM
To: TechStaff
Subject: FW: Save the date - AP webinar meeting Nov 30, 1-5 pm

fyi

From: James Fletcher <unfa34@gmail.com>
Date: Tuesday, October 25, 2022 at 7:38 AM
To: Beaty, Julia <jbeaty@mafmc.org>, Moore, Christopher <cmoore@mafmc.org>, Beal, Robert <rbeal@asmfc.org>, Batsavage, Chris <chris.batsavage@ncdenr.gov>, Didden, Jason <jdidden@mafmc.org>
Subject: Re: Save the date - AP webinar meeting Nov 30, 1-5 pm

HOW TO FORCE MONITORING COMMITTEE IN LITE OF BEST SCIENCE BOFFF **BIG OLD FAT FECUND FEMALE FISH** A CHANGE IN RECREATIONAL REGULATIONS ***EEZ & STATE WATERS***
TOTAL ALLOWABLE LENGTH TOTAL RETENTION NO DISCARDS!!!
PRESTIGIOUS ELITE RECREATIONAL FISHERS IN EEZ MUST ONLY HAVE THE SAME TOTAL LENGTH AS DEPRIVED SHORE SIDE FISHERS;; BOTH RECEIVE A VIOLATION FOR THROWING ANY FISH BACH * NO DISCARDS**** EXAMPLE ***ELIMINATION OF DISCARDS IN SUMMER FLOUNDER** WOULD ALLOW TOTAL **RETENTION** LENGTH TO BE PLUS OR MINUS 80 INCHES. FOR PRESTIGIOUS ELITE { TO BRAG ABOUT FISH [**suggest a 6 to 9 ought hook size} NOT REQUIRE** A 6 TO 10 OUGHT HOOK } HOOK SIZE WOULD ALLOW THE PRESTIGIOUS ELITE {BRAG ABOUT FISH} STILL NO DISCARDS. PRESTIGIOUS ELITE COULD VOLUNTARY USE HOOK SIZE FOR BLACK SEA BASS & SCUP {must comply to total length no discard.
Does the Monitoring Committee have authority to consider no discards & total length?
WITH BOFFFF WHY SHOULD REGULATIONS IN EEZ TARGET THE **BIG OLD FAT FECUND FISH? WHY SHOULD PRESTIGIOUS ELITE BE ALLOWED TO DICTATE DISCARDS ?**
by not eliminating discards is the Monitoring Committee ASMFC & MAFMC violating Magnuson & ASMFC charter to prevent physical waste?

On 10/24/2022 1:22 PM, Beaty, Julia wrote:

> Dear Summer Flounder, Scup, and Black Sea Bass Advisory Panel Members,
>
> Please hold Wednesday November 30, 2022 from 1 pm to 5 pm for a webinar meeting to discuss 2023 recreational management measures for all three species. During this meeting we will discuss the process for setting 2023 bag, size, and season limits; review Monitoring Committee recommendations; and discuss AP input and recommendations for 2023 recreational measures.
>
> Webinar connection information and background materials for the AP meeting will be available closer to the meeting date.
>
> The Monitoring Committee will meet on October 26 and November 15 to develop their recommendations. Please see the Council's calendar web page for more information.
>
> Please let us know if you have any questions.
>
> Sincerely,
> Julia, Kiley, and Hannah (MAFMC staff leads)

Dustin and Tracey (ASMFC staff leads)

Julia Beaty
Fishery Management Specialist
Mid-Atlantic Fishery Management Council
800 N. State Street, Suite 201
Dover, DE 19901
302-526-5250
jbeaty@mafmc.org
Pronouns: She/her/hers

--
United National Fisherman's Association James Fletcher Director 123 Apple Rd Manns Harbor NC 27953 land 252-473-3287 cell 757-435-8475

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 2, 2022

To: Chris Moore, Executive Director

From: Julia Beaty, Staff

Subject: Black Sea Bass Recreational Measures for 2023

On Tuesday, December 13, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (Board) will consider 2023 recreational management measures for black sea bass, including the use of either conservation equivalency or coastwide measures. Materials listed below are provided for the Council and Board's discussion of this agenda item. As noted below, some materials will be posted at a later date and some materials are behind other tabs.

1) Summary of November 15, 2022 Monitoring Committee meeting (*behind Tab 6*)
2) Council staff memo on 2023 recreational black sea bass measures dated November 10, 2022
3) Summary of October 26, 2022 Monitoring Committee Meeting (*behind Tab 6*)
4) 2020-2021 Year-End Catch Accounting and Accountability Measures Letter from GARFO dated October 20, 2022 (*behind Tab 5*)
5) Virginia Marine Resources Commission proposal to open the black sea bass recreational fishery in February 2023
6) Email comments from advisors and others on summer flounder, scup and/or black sea bass recreational measures received by November 30, 2022 (*behind Tab 6*)

The following materials will be posted to the meeting page once they are available:

7) Summary of the Advisory Panel's November 30 meeting
8) Any additional public comments received by the supplemental comment deadline of December 8, 2022

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 10, 2022

To: Chris Moore, Executive Director

From: Julia Beaty, staff

Subject: Black Sea Bass Recreational Management Measures for 2023

Summary

This memo provides information to assist the Monitoring Committee (MC), Advisory Panels, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (Commission) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) in developing recommendations for 2023 recreational black sea bass measures (i.e., bag, size, and season limits).

2023 will be the first year that measures will be set using the Percent Change Approach, which is pending implementation through the Recreational Harvest Control Rule Framework/Addenda. Under the Percent Change Approach, recreational measures will no longer aim to achieve but not exceed the recreational harvest limit (RHL). Instead, measures will aim to achieve a different level of harvest, which will be defined based on expectations of 2023 harvest under 2022 measures compared to the 2023 RHL, as well as considerations about stock biomass.

For black sea bass, the MC is tasked with recommending either use of coastwide measures (i.e., identical measures in all states and federal waters) or conservation equivalency (state- or region-specific measures in state waters, and "non-preferred" coastwide measures that are waived in favor of the state measures). Under conservation equivalency, the Council and the Board must adopt non-preferred coastwide and precautionary default measures (described in more detail below). The combination of state/regional measures must achieve the same level of expected harvest as the non-preferred coastwide measures. The appropriate level of harvest will be defined through the Percent Change Approach. State/regional measures will be determined through the Commission process in early 2023.

Improved statistical modeling tools are available for setting 2023 measures, including the Recreational Demand Model (RDM) and the Recreational Fleet Dynamics Model (RFDM). Under both models, the 2023 RHL is below five of six potential confidence intervals (CIs) around estimated 2023 harvest under 2022 measures. Given that the most recent estimate of spawning stock biomass is more than 150% of the target level, this requires a 10% reduction in harvest for 2023 under the Percent Change Approach. This reduction is applied to the estimate of 2023 harvest under 2022 measures.

Staff recommend continued use of conservation equivalency to waive federal waters recreational black sea bass measures in 2023. Given the 10% reduction in harvest required under the Percent Change Approach, modifications to the non-preferred coastwide measures are needed. Based on the RDM, a one-inch increase in the minimum size limit under the non-preferred coastwide measures would not achieve the full reduction needed; therefore, **the staff recommendation for the non-preferred coastwide measures is to increase the minimum size limit by one inch with additional restrictions made to the possession limit and/or open season**. Given time constraints, additional model runs were not carried out to further refine this recommendation prior to completion of this memo. Additional model runs may be carried out prior to or shortly after the MC meeting. Given the restrictions needed in 2023, staff also recommend that the current **precautionary default measures be modified to a 16 inch minimum size limit, a two fish possession limit, and an open season of June 1 – August 31.** The 2022 non-preferred coastwide measures are likely not restrictive enough to serve their intended purpose for 2023.

In addition, staff recommend using either the RDM or the RFDM for all steps of the recreational black sea bass measures setting process for 2023. The same model should be used for all relevant steps, including determining the appropriate overall percent change in harvest, setting the non-preferred coastwide measures under conservation equivalency, and developing state waters measures.

Overview of Percent Change Approach

In June 2022, the Council and the Policy Board approved a new process for setting recreational measures called the Percent Change Approach.[1] They agreed to use this approach for summer flounder, scup, and black sea bass starting with 2023 measures. Under this approach, measures will aim to achieve a specified percent change in harvest compared to the expectation of harvest in the upcoming year(s) under current measures. Unlike the previous process, recreational measures will no longer aim to achieve but not exceed the RHL. Instead, measures will aim to achieve a different level of harvest, which will vary based on the following two factors:

1) A CI around an estimate of expected harvest in the upcoming two years under current measures compared to the average RHL for the upcoming two years and
2) Biomass compared to the target level, as defined by the most recent stock assessment.

The resulting percent change in harvest that measures should aim to achieve is summarized in Table 1. Information about how to apply this process for 2023 black sea bass measures is described in more detail in later sections of the document.

The Percent Change Approach is intended to allow recreational measures to remain unchanged across two years, aligned with the timing of updated management track stock assessments, which are expected to be available every other year. However, measures will be set on a one-year cycle for 2023 given that 2023 is an interim year for the management track assessments. This process will be used for a two-year cycle starting with 2024-2025.

[1] Additional information is available at https://www.mafmc.org/actions/hcr-framework-addenda.

Table 1: Process for determining appropriate percent change in expected harvest when developing measures under the Percent Change Approach.

Column 1 Future RHL vs Estimated Harvest	*Column 2* Biomass compared to target level (SSB/SSB_{MSY})	*Column 3* Change in Harvest
Future 2-year average RHL is **greater than** the upper bound of the harvest estimate CI (harvest expected to be lower than the RHL)	**Very high** (greater than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%
	High (at least the target, but no higher than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below target stock size)	Liberalization: 10%
Future 2-year average RHL is **within** harvest estimate CI (harvest expected to be close to the RHL)	**Very high** (greater than 150% of target)	Liberalization: 10%
	High (at least the target, but no higher than 150% of target)	No liberalization or reduction: 0%
	Low (below target stock size)	Reduction: 10%
Future 2-year average RHL is **less than** the lower bound of the harvest estimate CI (harvest is expected to exceed the RHL)	**Very high** (greater than 150% of target)	Reduction: 10%
	High (at least the target, but no higher than 150% of target)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below target stock size)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%

Past Management Measures

Joint Council and Commission management of the recreational black sea bass fishery began in 1998. Until 2010, identical measures were used in state and federal waters, as dictated by the Fishery Management Plan (FMP) at the time. From 2011 through 2018, the Commission developed a series of addenda to enable state-specific and regional measures to be used in state waters under a process referred to as "ad hoc regional management." With approval of the Commission's Addendum XXXII in 2018, an addendum is no longer needed to modify the state measures.

Under the ad hoc approach, Delaware through North Carolina (north of Cape Hatteras) set measures that were generally consistent with federal measures while Massachusetts through New Jersey set state-specific measures that were more restrictive than the federal waters measures.

State and federal waters measures remained unchanged during 2018-2021 with the exception of minor season adjustments in Massachusetts, Virginia, and North Carolina which were intended to maintain status quo levels of harvest (Table 2, Table 3).

The Council and Board agreed to leave the recreational black sea bass measures in all states and federal waters unchanged in 2020 and 2021 despite expected RHL overages. This was viewed as a temporary solution to allow more time to consider how to fully transition the management system to use of the revised Marine Recreational Information Program (MRIP) data (see next section), including further development of the then ongoing Commercial/Recreational Allocation Amendment and the Recreational Harvest Control Rule Framework/Addenda. Given the resulting RHL and annual catch limit (ACL) overages (Table 5), and expected continued overages under status quo measures, the Council and Board required that states restrict their measures in 2022 to collectively achieve a 20.8% reduction in harvest compared to 2018-2021 average harvest with the goal of preventing an overage of the 2022 RHL (Table 4).

The conservation equivalency process for waiving federal waters measures was used for black sea bass for the first time in 2022. Under conservation equivalency, the Council and Board must adopt two associated sets of measures: the non-preferred coastwide measures, and the precautionary default measures. The **non-preferred coastwide measures** are a set of measures that would be expected to constrain harvest to the appropriate coastwide target[2] if implemented on a coastwide basis (i.e., the same measures in all states and in federal waters). The coastwide measures are included in the federal regulations but waived in favor of state waters measures if the combination of state measures can be demonstrated to collectively constrain harvest to the same coastwide target as the non-preferred coastwide measures. The non-preferred coastwide measures for 2022 include a 14-inch minimum size limit, a 5 fish possession limit, and an open season of May 15-October 8.

The **precautionary default measures** would be implemented in any state or region that failed to develop adequate measures to constrain landings as required by the conservation equivalency guidelines. The precautionary default measures in 2022 include a 16-inch minimum size, a 3 fish possession limit, and an open season of June 24-December 31.

Starting in 2018, the Council and Board provided states the opportunity to open their recreational black sea bass fisheries during February for the first time since 2013 under specific constraints. Participating states may need to adjust their measures during the rest of the year to account for February harvest to help ensure that participation in this opening does not increase the chances of the coastwide target level of harvest being exceeded. Proposals for February openings must be reviewed by the Commission's Technical Committee and approved by the Board. To date, only Virginia and North Carolina have participated in the February opening. North Carolina ended their participation after 2020 and has indicated that they do not intend to participate in future years. Virginia participated every year except 2022 and has expressed an interest in participating in 2023.

[2] Through 2022, the target level of harvest was the RHL. Starting with 2023, the target level of harvest will be defined by the Percent Change Approach.

Table 2: Federal waters black sea bass recreational management measures, 2007-2021.

Year	Min. size	Bag limit	Open season
2007-2008	12”	25	Jan 1 - Dec 31
2009	12.5”	25	Jan 1 - Oct 5
2010-2011	12.5”	25	May 22 - Oct 11; Nov 1 - Dec 31
2012	12.5”	25	May 19 - Oct 14; Nov 1 - Dec 31
2013	12.5”	20	Jan 1 - Feb 28; May 19 - Oct 14; Nov 1 - Dec 31
2014	12.5”	15	May 19 - Sept 18; Oct 18 - Dec 31
2015-2017	12.5”	15	May 15 - Sept 21; Oct 22 - Dec 31
2018-2021	12.5”	15	Feb 1 - 28; May 15 - Dec 31
2022	Federal waters measures waived through conservation equivalency		

Table 3: State waters black sea bass recreational measures in 2018-2021. Measures were the same across all years unless otherwise noted. All changes were intended to maintain similar levels of harvest.

State	Min. Size	Bag Limit	Open Season
Maine	13”	10	May 19 - Sept 21; Oct 18 - Dec 31
New Hampshire	13”	10	Jan 1 - Dec 31
Massachusetts	15”	5	2018: May 19 - Sept 12
			2019 & 2020: May 18 - Sept 8
			2021: May 18 – Sept 8
Rhode Island	15”	3	Jun 24 - Aug 31
		7	Sept 1 - Dec 31
Connecticut private & shore	15”	5	May 19 - Dec 31
CT authorized party/charter monitoring program vessels	15”	5	May 19 - Aug 31
		7	Sept 1- Dec 31
New York	15”	3	Jun 23 - Aug 31
		7	Sept 1- Dec 31
New Jersey	12.5”	10	May 15 - Jun 22
		2	Jul 1- Aug 31
		10	Oct 8 - Oct 31
	13”	15	Nov 1 - Dec 31
Delaware	12.5”	15	May 15 - Dec 31
Maryland	12.5”	15	May 15 - Dec 31
Virginia	12.5”	15	2018: Feb 1 - 28; May 15 - Dec 31
			2019: Feb 1-28; May 15-31; June 22-Dec 31
			2020: Feb 1 - 29; May 29 - Dec 31
			2021: Feb 1-28; May 15-May 31; Jun 16-Dec 31
North Carolina, North of Cape Hatteras (35° 15’N)	12.5	15	2018: Feb 1 - 28; May 15 - Dec 31
			2019: Feb 1 - 28; May 17 - Dec 31
			2020: Feb 1 - 29; May 17 - Nov 30
			2021: May 15 - Dec 31

Table 4: 2022 state waters black sea bass recreational measures.

State	Min. Size	Bag Limit	Open Season
Maine	13”	10 fish	May 19-September 21; October 18-December 31
New Hampshire	13”	10 fish	January-December 31
Massachusetts	16”	4 fish	May 21-September 4
Rhode Island private & shore	16”	2 fish	May 22-August 31
		3 fish	September 1-December 31
Rhode Island for-hire		2 fish	June 18-August 31
		6 fish	September 1-December 31
Connecticut private & shore	16”	5 fish	May 19-December 1
CT authorized party/charter monitoring program vessels		5 fish	May 19-August 31
		7 fish	September 1-December 31
New York	16”	3 fish	June 23-August 31
		6 fish	September 1-December 31
New Jersey	13”	10 fish	May 17-June 19
		2 fish	July 1-August 31
		10 fish	October 7-October 26
		15 fish	November 1-December 31
Delaware	13”	15 fish	May 15-December 11
Maryland			
Virginia			
North Carolina, North of Cape Hatteras (35° 15’N)			

Table 5: Black sea bass recreational landings, dead discards, and dead catch compared to the RHL and ACLs, 2012-2021. The ACLs and RHLs did not account for the revised MRIP data until 2020. Therefore, overage/underage evaluations must be based in the old MRIP units through 2019 and the new MRIP units starting in 2020. All values are in millions of pounds.

Year	Rec. harvest		RHL	RHL overage/ underage[b]	Rec. dead discards		Rec. dead catch		ACL	ACL overage/ underage[b]
	Old MRIP units	New MRIP units			Old MRIP units[a]	New MRIP units[c]	Old MRIP units	New MRIP units		
2012	3.26	7.04	1.32	+147%	0.80	2.31	4.07	9.35	1.86	+119%
2013	2.64	5.69	2.26	+17%	0.65	1.65	3.29	7.34	2.9	+13%
2014	3.85	7.24	2.26	+70%	0.84	1.85	4.69	9.09	2.9	+62%
2015	4.11	9.06	2.33	+76%	0.82	2.17	4.93	11.23	2.9	+70%
2016	5.19	12.05	2.82	+84%	1.21	3.07	6.40	15.12	3.52	+82%
2017	4.50	11.50	4.29	+5%	1.27	3.60	5.77	15.10	5.38	+7%
2018	3.82	7.92	3.66	+4%	1.1	2.28	4.92	10.20	4.59	+7%
2019	3.46	8.61	3.66	-5%	0.5	3.24	3.96	11.85	4.59	-14%
2020	NA	9.05	5.81	+56%	NA	3.46	NA	12.51	8.09	+55%
2021	NA	11.97	6.34	+89%	NA	4.20	NA	16.17	7.93	+104%

[a] Based on the data update provided by the NEFSC in 2018 (most recent data from NEFSC in "old" MRIP units). Values for 2018 and 2019 were provided by GARFO.
[b] Based on a comparison with old MRIP data through 2019 and new MRIP data starting in 2020.
[c] Values through 2019 are from the 2021 management track stock assessment. Values for 2020-2021 were provided by GARFO. GARFO generated 2020-2021 estimates of dead discards in weight by applying the average weight of discarded fish in 2019 (0.77 lb) to the proportion of MRIP live discards in number of fish (MRIP "B2s") that are assumed to die after being discarded (15% for black sea bass).

Recreational Catch and Landings Trends

In July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology (i.e., a transition from a telephone-based effort survey to a mail-based effort survey). Recreational data included in this memo reflect revised MRIP data except where otherwise stated.

MRIP estimates for 2020 were impacted by the COVID-19 pandemic due to temporary suspension of the Access Point Angler Intercept Survey (APAIS) and headboat sampling. Some minor impacts continued into 2021. The National Marine Fisheries Service (NMFS) used imputation methods to fill gaps in 2020-2021 data with data collected in 2018 and 2019. For example, the 2020 black sea bass harvest estimate for Maine through Virginia combined was developed using approximately 17% imputed data and the 2021 estimate used 1% imputed data. For additional information, see the information on 2020 recreational harvest estimates posted at: https://www.mafmc.org/council-events/2021/sfsbsb-mc-july27.

Table 5 in the previous section shows a recent time series of recreational black sea bass harvest, dead discards, and dead catch in weight. Recreational black sea bass harvest in 2021 (the most recent complete year of data) totaled 11.97 million pounds, the second highest harvest estimate in the time series of MRIP data starting in 1981.

MRIP data for 2022 are currently incomplete and preliminary. Preliminary estimates for the first four waves (January - August) of 2022 are currently available. These data suggest that 5.36 million pounds of black sea bass were harvested from Maine through Cape Hatteras, North Carolina during January - August 2022. This preliminary estimate is 31% lower than 2021 wave 1-4 harvest; however, 2021 wave 1-4 harvest was higher than prior years. The preliminary 2022 wave 1-4 harvest estimate is within 1% of average 2018-2020 wave 1-4 harvest.

On average over the past three years (2019-2021), New York accounted for the greatest proportion of recreational black sea bass harvest (27%), followed by Massachusetts (19%), New Jersey (16%), Connecticut (14%), Rhode Island (13%), Virginia (7%), Delaware (2%), Maryland (2%), and North Carolina (less than 1%; Figure 1).

Most recreational black sea bass harvest in Massachusetts through New York occurs in state waters, while most harvest in New Jersey through North Carolina occurs in federal waters (Table 6).

Across all states from Massachusetts through North Carolina combined, most recreational black sea bass harvest in 2021 occurred in wave 3 (May-June), followed by wave 5 (September-October). However, the proportions of harvest by wave varied by state (Table 7), influenced in part by the varying regulations by state and wave (Table 3).

On average, over the past 10 years through 2021, 84% of black sea bass harvest from Maine through North Carolina in numbers of fish occurred on private/rental boats, followed by 14% on party/charter boats, and 25 from shore.

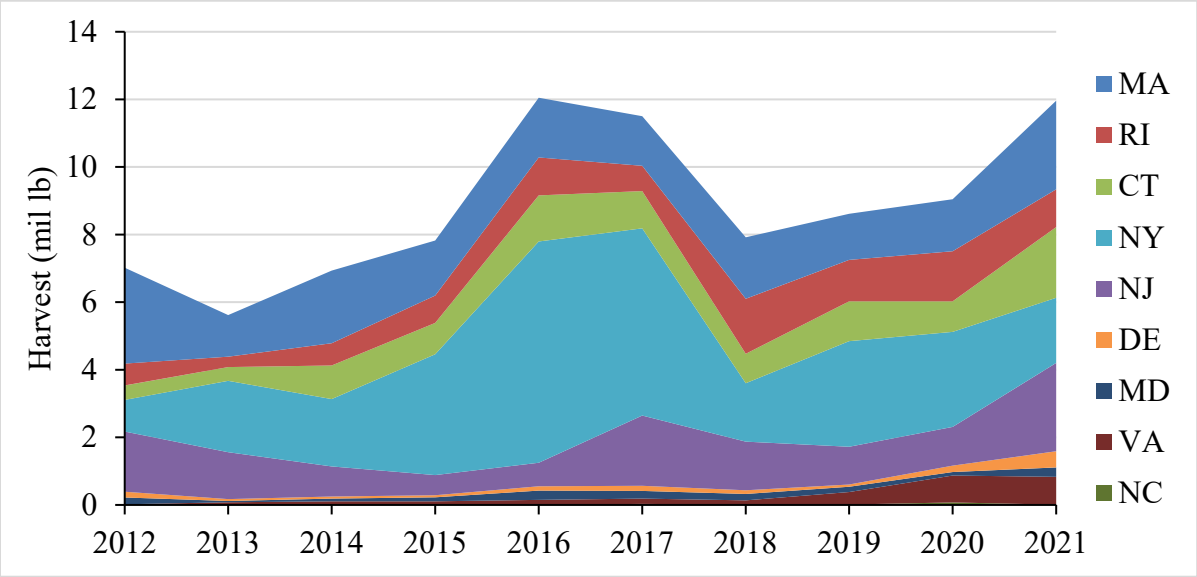

Figure 1: Recreational black sea bass harvest by state, 2012-2021.

Table 6: Average proportion of black sea bass recreational harvest in weight from federal and state waters, 2019-2021.

State	Federal waters	State waters
MA	6%	94%
RI	27%	73%
CT	21%	79%
NY	41%	59%
NJ	68%	32%
DE	96%	4%
MD	99%	1%
VA	88%	12%
NC	83%	17%

Table 7: Proportion of recreational black sea bass harvest in weight by wave within each state in 2021. North Carolina is the only state in the management unit which conducts MRIP sampling during wave 1 (Jan/Feb).

State	Wave 1 Jan/Feb	Wave 2 Mar/Apr	Wave 3 May/Jun	Wave 4 Jul/Aug	Wave 5 Sept/Oct	Wave 6 Nov/Dec
MA	0%	0%	89%	8%	3%	0%
RI	0%	0%	2%	46%	40%	12%
CT	0%	0%	35%	14%	50%	2%
NY	0%	0%	13%	29%	31%	27%
NJ	0%	0%	58%	13%	14%	15%
DE	0%	0%	19%	18%	15%	48%
MD	0%	0%	54%	13%	25%	9%
VA	0%	0%	52%	17%	10%	22%
NC	3%	10%	34%	30%	16%	6%
ME-NC	0%	0%	46%	18%	23%	13%

Percent Change in Harvest Needed for 2023

Comparison of 2023 RHL to Expected 2023 Harvest Under 2022 Measures

As previously stated 2023 recreational black sea bass measures will be set using the Percent Change Approach. The first step will be to generate an estimate of expected 2023 harvest under 2022 measures, with a CI, and comparing that estimate to the 2023 RHL (i.e., 6.57 million pounds).

In the past, expected harvest under status quo measures was typically estimated by projecting harvest for the current year[3] and assuming harvest in the following year would be similar if measures remained unchanged. Improved methods of estimating harvest are now available. Specifically, the Council and Commission have supported development of two statistical models to predict the impacts of measures on recreational harvest and discards of summer flounder, scup, and black sea bass.

The Northeast Fisheries Science Center has developed the **Recreational Demand Model (RDM)** for these species. The black sea bass component of this model currently accounts for the impacts of regulations and angler preferences on harvest and discards. It also predicts how the summer flounder and scup measures impact black sea bass harvest and discards. Angler preferences are based on a 2022 survey of anglers from Massachusetts through Virginia. Catch-per-trip is derived from 2021 MRIP data and catch-at-length distributions are derived from 2019-2021 MRIP and angler logbook data. The model may be updated in the near future to account for projected 2023 numbers-at-age from the stock assessment model. Additional information about this model can be found in this overview document: https://www.mafmc.org/s/fluke-RDM-overview-final-report.pdf.

[3] Staff typically project current year harvest using preliminary wave 1-4 data and assuming the same proportion of catch and landings by wave as in the previous year or a multi-year average (with some adjustments to this methodology as appropriate).

The **Recreational Fleet Dynamics Model (RFDM)** is being developed by scientists at the Rhode Island Department of Environmental Management and uses a shape constrained additive model to predict harvest and discards based on management measures. Covariates in the model include year, minimum size, wave, state, bag limit, a lagged recruitment variable, and the RHL. An R Shiny App is being developed to allow the MC to modify management measures and view the resulting predicted harvest and discards. Additional information about this model can found in this overview document:
https://www.mafmc.org/s/RFDM_CompleteModel_WriteUps_Oct2022_FinalDraftclean.pdf

Both models allow for consideration of varying management measures at the state and wave level. Both models were reviewed by the Council's Scientific and Statistical Committee in September 2021[4] and have been improved since that time based on their recommendations.

Table 8 shows RDM and RFDM estimates of 2023 black sea bass harvest under 2022 measures, as well as associated CIs. **The 2023 RHL (6.57 mil lb) is below the lower bound of all but one of the six CIs** in Table 8.

Council staff recommend use of the 80% CI and caution against use of the higher percentage CIs shown in Table 8. The Recreational Harvest Control Rule Framework/Addenda Fishery Management Action Team/Plan Development Team (FMAT/PDT) recommended use of an 80% CI under the Percent Change Approach based on an analysis of several years of MRIP data for each species. The FMAT/PDT agreed that an 80% CI would be appropriate in this context given variability in MRIP data from year to year, even under unchanged measures. A higher percentage CI would result in a wider range of values, which may not be appropriate given how the CI would be used in management under the Percent Change Approach. The FMAT/PDT made this recommendation prior to availability of preliminary results from the RDM and RFDM. Considerations about variability and uncertainty in projections of future harvest may differ under these models (e.g., as more variables are incorporated); however, because MRIP is a primary data source in these models, the rationale behind the 80% CI is still appropriate. In addition, the RDM and RFDM are expected to generate more accurate predictions of harvest compared to past methods, as they use a statistical modeling approach to account for more variables than the MC has traditionally been able to consider when using only MRIP data. Therefore, it would not be appropriate to use a CI resulting in a wider range of values than the 80% CI recommended by the FMAT/PDT based on their analysis of MRIP data.

Under a higher percent CI, the wider range of values is more likely to encompass the "true" harvest, but this also creates a range around a harvest estimate which is less meaningful for management. For example, the very wide ranges of expected harvest under the 95% CIs may not be realistic estimates of 2023 harvest. This creates a higher likelihood of ending up in a Percent Change Approach bin which is inappropriate for the "true" harvest. This could result in a required liberalization when a reduction is more appropriate, or vice versa, depending on the circumstances. A lower percentage CI would represent a more precautionary approach in this context, which may be especially appropriate for 2023 given this is the first year of using these models and applying the Percent Change Approach.

[4] The final report from the SSC review is available at https://www.mafmc.org/s/05_Rec-Model-Peer-Review-Reports.pdf.

Based on how the values shown in Table 8 would be used under the Percent Change Approach (Table 1), five of the six CIs would result in the same outcome for black sea bass in 2023 (i.e., a 10% reduction).

For all these reasons, **staff recommend using an 80% CI in the Percent Change Approach for 2023.** Staff recommend use of the same percentage CI across summer flounder, scup, and black sea bass for 2023. In addition, staff recommend the MC have additional discussions in 2023 to develop a more consistent approach to application of CIs under the Percent Change Approach for all applicable species in future years.

Table 8: RDM and RFDM estimates of 2023 harvest under 2022 measures and associated CIs. All values are in millions of pounds. The RFDM provides estimates in numbers of fish, which were converted to pounds based on the average weight of harvested fish in 2019 from MRIP data.

Model	Estimated 2023 harvest under 2022 measures	95% CI	90% CI	80% CI	2023 RHL
RDM (median)	11.05	9.17 – 13.29	9.53 – 12.67	10.00 – 11.96	6.57
RFDM (median)	12.47	6.29 – 21.91	7.25 – 20.60	8.43 – 18.82	

Black Sea Bass Stock Status

As shown in Table 1, the second step under the Percent Change Approach is to consider the most recent estimate of spawning stock biomass compared to the target level. According to the 2021 management track stock assessment,[5] black sea bass is 210% of the target stock size. This puts black sea bass in the "very high" stock size category for the Percent Change Approach (Table 1, Column 2).

Resulting Percent Change and Harvest Target

Based on the information summarized above, the Percent Change Approach would require a **10% reduction** in harvest for 2023 (Table 1, Column 3) under five of the six CIs shown in Table 8, including under the staff recommended CI. This change in harvest is relative to estimated 2023 harvest under 2022 measures. As such, this would result in **a harvest target of 9.95 million pounds based on the RDM results or 11.22 million pounds based on the RFDM** results shown in Table 8.

The MC should provide recommendations to the Council and Board on which harvest target is most appropriate. This should include a recommendation for a preferred model for 2023 (i.e., the RDM or RFDM), if appropriate. In making these recommendations, the MC should consider how the models may be used in subsequent steps of the measures setting process for 2023. Given that the two models produce slightly different results, staff recommend using the same model for all relevant steps of the process, including determining the appropriate overall percent change in

[5] Available at: https://apps-nefsc.fisheries.noaa.gov/saw/reviews_report_options.php.

harvest, setting the non-preferred coastwide measures under conservation equivalency, and developing state waters measures.

As described in the staff recommendation section below, further model runs are needed to evaluate the management measures which may be appropriate to achieve these target levels of harvest. Additional information may be available prior to the November 15, 2022 MC meeting.

Accountability Measures

Federal regulations include reactive accountability measures (AMs) for when the recreational black sea bass ACL is exceeded. This can include paybacks of ACL overages depending on stock status and the magnitude of the overage, as described below. ACL overages in the recreational fishery are evaluated by comparing the most recent 3-year average recreational ACL to the most recent 3-year average of recreational dead catch (i.e., landings and dead discards). If average dead catch exceeds the average ACL, then the appropriate AM is determined based on the criteria listed below. This reflects minor revisions to the AMs made through the Recreational Harvest Control Rule Framework/Addenda.

1. If the stock is overfished ($B < ½ B_{MSY}$), under a rebuilding plan, or the stock status is unknown: The exact amount, in pounds, by which the most recent year's recreational ACL has been exceeded, will be deducted in the following fishing year, or as soon as possible once catch data are available. This payback may be evenly spread over two years if doing so allows for use of identical recreational management measures across the upcoming two years.
2. If biomass is above the threshold, but below the target ($½ B_{MSY} < B < B_{MSY}$), and the stock is not under a rebuilding plan:
    - If only the recreational ACL has been exceeded, then adjustments to the recreational management measures (bag, size, and seasonal limits) would be made in the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measures and the conditions that precipitated the overage.
    - If the most recent estimate of total fishing mortality exceeds F_{MSY} (or the proxy), then an adjustment to the recreational ACT will be made as soon as possible as a payback that will be scaled based on stock biomass. The calculation for the payback amount in this case is: (overage amount) * $(B_{msy}-B)/½\ B_{msy}$. This payback may be evenly spread over two years if doing so allows for use of identical recreational measures across the upcoming two years. If an estimate of total fishing mortality is not available for the most recent complete year of catch data, then a comparison of total catch relative to the ABC will be used.
3. If biomass is above the target ($B > B_{MSY}$): Adjustments to the recreational management measures (bag, size, and seasonal limits) would be considered for the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measures and the conditions that precipitated the overage.

Based on a comparison of 2019-2021 average recreational dead catch to the 2019-2021 average ACLs, recreational AMs have been triggered for black sea bass (Table 9). Given that black sea bass is above the biomass target, the regulations require adjustments to the recreational measures. The regulations do not specify how the measures should be modified.

As previously stated, recreational measures for black sea bass were restricted in 2022 with the goal of preventing an overage of the 2022 RHL. These restrictions were made in response to RHL and recreational ACL overages in prior years. These restrictions are not accounted for in the 2019-2021 comparisons which triggered an AM for 2023. The impacts of the 2022 restrictions on harvest cannot be fully evaluated with currently available preliminary partial year MRIP data. It is also worth noting that several states did not implement the restrictions until mid-year in 2022; therefore, the restrictions may not have their full intended effect in 2022.

On October 20, 2022, the NMFS Greater Atlantic Regional Fisheries Office (GARFO) Regional Administrator sent a letter to the Council[6] stating that given actions taken by the Council and Commission over the past year, including revisions to the commercial/recreational allocation, the restrictions in recreational measures implemented for 2022, and final action on the Recreational Harvest Control Rule Framework/Addenda, no additional action, beyond changes which may be required through the Percent Change Approach, is needed to address the triggering of an AM for black sea bass.

As noted above, based on the results of the RDM and RFDM, the Percent Change Approach will likely require a 10% reduction in black sea bass harvest in 2023 compared to estimated 2023 harvest under 2022 measures. **Given all these considerations, Council staff recommend that no additional restrictions beyond this 10% reduction be implemented for black sea bass in 2023 due to the triggering of an AM.**

As previously noted, only one of the six CIs shown in Table 8 results in the 2023 RHL falling within the CI and Council staff caution against using this CI. In addition to the concerns previously described, use of this CI would result in a 10% liberalization under the Percent Change Approach, which may not be justifiable given the triggering of AMs.

Table 9: AM evaluation for the recreational black sea bass fishery, comparing recreational dead catch to the ACLs. The ACLs through 2019 did not account for the revised MRIP data and therefore must be compared to dead catch estimates based on the old MRIP estimates. All values are in millions of pounds.

Year	Rec. ACL	Rec. harvest	Rec. dead discards	Rec. dead catch	% Over (+) or Under (-) ACL
2019 old MRIP	4.59	3.46[a]	0.50[a]	3.96[a]	-14%
2020 new MRIP	8.09	9.05	3.46[b]	12.50	+55%
2021 new MRIP	7.93	11.97	4.20[b]	16.16	+104%
2019-2021 avg	6.87	8.16	2.72	10.87	+58%

[a] 2019 recreational harvest, dead discards in weight, and total dead catch in weight in "old" MRIP units were provided to the NMFS Greater Atlantic Regional Fisheries Office by the NEFSC.
[b] Recreational dead discards in weight are typically provided by the NEFSC and are calculated using the same methods as the stock assessments for each species. These estimates are not currently available for 2020-2021; therefore, GARFO generated estimates of recreational dead discards in weight by applying the average weight of discarded fish in 2019 from the 2021 management track assessment to the MRIP estimate of dead discards in

[6] Available at: https://www.mafmc.org/s/GARFO-2020-21-FSB-Catch-Accounting-Letter-and-Report_Oct-2022.pdf

numbers of fish in 2020 and 2021 (i.e., the MRIP estimate of total discards, i.e., MRIP B2s, in numbers of fish multiplied by the dead discard mortality rates used in the assessments for each species –15% for black sea bass).
[c] 2019 recreational harvest, dead discards in weight, and total dead catch in weight were provided by the NMFS Greater Atlantic Regional Fisheries Office.

Staff Recommendations for 2023 Measures

Staff recommend continued use of regional conservation equivalency for black sea bass in 2023. As previously described, under conservation equivalency, the Council and Board must adopt a set of non-preferred coastwide measures. If implemented on a coastwide basis, the non-preferred coastwide measures should be expected to achieve the target level of coastwide harvest defined through the Percent Change Approach. Under conservation equivalency, these measures are written into the federal regulations, but waived in favor of the state- or region-specific measures if the combination of state/regional measures can be demonstrated to also achieve the same harvest target.

As previously stated, the current non-preferred coastwide measures include a 14 inch minimum size limit, a 5 fish possession limit, and an open season of May 15 - October 15. The RDM suggests these measures would result in 12.72 million pounds of harvest in 2023 if implemented in all states. This is higher than the 9.95 million pound harvest target based on the RDM to achieve the required 10% reduction in harvest under the Percent Change Approach.

The RDM suggests that modifying the non-preferred coastwide measures by increasing the minimum size limit by one inch (to 15 inches) and leaving the season and possession limits unchanged would result in 10.61 million pounds of harvest in 2023 if implemented in all states. This is 7% higher than the aforementioned 2023 harvest target of 9.95 million pounds.

Due to timing constraints, additional model runs were not carried out prior to completion of this memo. As such, staff recommend a one inch increase in the minimum size limit under the non-preferred coastwide measures, with additional restrictions in the season and/or bag limit to achieve the target level of harvest for 2023. The MC should discuss which additional changes are preferred. Additional model runs may be carried out prior to or shortly after the MC meeting to support these recommendations.

Given time constraints, it was not possible to use the RFDM to analyze the current non-preferred coastwide measures or modifications to these measures prior to completion of this memo. However, this may also be possible prior to or shortly after the MC meeting to help inform the MC recommendations.

Staff also recommend modifications to the precautionary default measures. The precautionary default measures are intended to be a deterrent against states/regions implementing measures inconsistent with the conservation equivalency guidelines and are not associated with any particular harvest target. They are intended to be more restrictive than the measures any state or region would consider implementing. The 2022 precautionary default measures consist of a 16 inch minimum size limit, a 3 fish possession limit, and an open season of June 24 – December 31.

At this time, it is not known how states/regions will adjust their measures to achieve the 10% reduction in harvest required under the Percent Change Approach for 2023. The Board may consider requiring all states to adjust their measures to achieve an equal proportional reduction in harvest (e.g., all states reduce their own expected harvest values by 10%). States will put forward

proposals for adjustments in measures consistent with guidelines agreed to by the Board. Considering the current state measures (Table 4) and the need for further restrictions in 2023, the current precautionary default measures may not be sufficiently restrictive. For example, the 2022 measures in Massachusetts include a 16 inch minimum size limit, a four fish possession limit, and an open season of May 21 – September 4. For these reasons, **staff recommend revised precautionary default measures consisting of a 16 inch minimum size limit, a two fish possession limit, and an open season of June 1 – August 31.**

COMMONWEALTH of VIRGINIA

Marine Resources Commission
Building 96
380 Fenwick Road
Fort Monroe, VA 23651

Travis A. Voyles
Acting Secretary of Natural and Historic Resources

Jamie L. Green
Commissioner

To: Tracey Bauer, ASMFC
Julia Beaty, MAFMC

From: Alexa Galvan, VMRC

Date: December 1, 2023

Subject: February 2023 Recreational Black Sea Bass Season

The Virginia Marine Resources Commission (VMRC) is proposing to open the recreational black sea bass fishery for February 1-28, 2023, with a 13" minimum size limit and a 15 fish bag limit in response to the National Marine Fisheries Service opening federal waters in February 2023. VMRC will make adjustments to the open season established through the recreational specifications process to account for additional landings that occur in February 2023.

Virginia asks that the Technical Committee support this proposal for a February 2023 recreational black sea bass season. Regulations during the February 2023 season will match those established for the 2022 recreational season as agreed upon in the 2022 specification setting process. Under conservation equivalency, vessels landing black sea bass in a state with an approved Wave 1 recreational fishery are subject to the state regulations during that Wave 1 fishery. Virginia will continue to monitor landings and collect biological data, using the same methods as in 2019 through 2021, to ensure accurate characterization of the 2023 February fishery. Virginia's February recreational black sea bass season has operated as a no-cost permit program in which the captain or operator of any vessel fishing for black sea bass must have a permit. That permit comes with two types of reporting requirements. Each vessel must hail VMRC Marine Police Operations station at the start of the trip, which allows MRIP staff or law enforcement to coordinate meeting some vessels at the dock when they land. MRIP staff counts the fish landed and collects lengths and weights. Each permittee must also report to the commission each trip taken, how many anglers were fishing, and the number of black sea bass kept and released by all anglers on the vessel. The MRIP-collected measurements determine an average weight per fish, using that data to create a length-weight relationship for conversion where necessary. Multiplying the average weight by the total number of angler-reported black sea bass results in an estimate of the total landings in pounds.

Once February 2023 harvest has been calculated, VMRC will submit a proposal for season adjustments to the 2023 season to account for February harvest to the Technical Committee for review. Season adjustments in 2023 will be based on average daily landing rates from 2021-2022, which represent the most recent two years of complete MRIP landings, or on some other range agreed on by the Technical Committee. The daily landing rate will be estimated based on the total pounds landed and the number of open days in each wave by year.

Virginia participated in the February fishery from 2018 through 2021. In 2021, VMRC recorded a total of 15,646 pounds of black sea bass landed in Virginia during the February recreational season, according to mandatory permit reporting requirements. Biological data from nine trips were collected by VMRC MRIP staff to estimate an average weight. Using average daily landings rates by wave, a closure of 15 days in wave 3 was estimated to result in savings of 15,416 pounds. The VMRC therefore amended the 2021 season to be open from May 15 through May 31 and June 16 through December 31 for a total closure of 15 days.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 1, 2022

To: Chris Moore, Executive Director

From: Kiley Dancy, Staff

Subject: Summer Flounder Recreational Measures for 2023

On Tuesday, December 13, the Council and Board will consider 2023 recreational management measures for summer flounder, including the use of either conservation equivalency or coastwide measures. Materials listed below are provided for the Council and Board's discussion of this agenda item. Please note that some materials will be posted at a later date, as noted below, and some materials are behind other tabs.

1) Summary of November 15, 2022 Monitoring Committee meeting (*behind Tab 6*)
2) Council staff memo on 2023 recreational summer flounder measures dated November 9, 2022
3) Summary of October 26, 2022 Monitoring Committee Meeting (*behind Tab 6*)
4) 2020-2021 Year-End Catch Accounting and Accountability Measures Letter from GARFO dated October 20, 2022 (*behind Tab 5*)
5) Email comments from advisors and others on summer flounder, scup and/or black sea bass recreational measures received by November 30, 2022 (*behind Tab 6*)

The following materials will be posted to the meeting page once they are available:

6) Summary of the Advisory Panel's November 30 meeting
7) Any additional public comments received by the supplemental comment deadline of December 8, 2022

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 9, 2022

To: Chris Moore, Executive Director

From: Kiley Dancy, Staff

Subject: Summer Flounder Recreational Management Measures for 2023

Summary

This memo provides information to assist the Monitoring Committee (MC), Advisory Panels, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) in developing recommendations for summer flounder recreational measures (i.e., bag, size, and season limits) for 2023.

2023 will be the first year that measures will be set using the Percent Change Approach, which is pending implementation through the Recreational Harvest Control Rule Framework/Addenda. As described in more detail below, under the Percent Change Approach, recreational measures will no longer aim to achieve but not exceed the recreational harvest limit (RHL). Instead, measures will aim to achieve a different level of harvest, which will be defined based on expectations of 2023 harvest under 2022 measures compared to the 2023 RHL as well as considerations about stock biomass.

For summer flounder, the MC is tasked with recommending either the use of coastwide measures (identical measures in all states and federal waters) or conservation equivalency (state- or region-specific measures in state waters, and "non-preferred" federal measures that are waived in favor of the state measures). Under conservation equivalency, the Council and Board must also adopt non-preferred coastwide and precautionary default measures (described in more detail below). Both the non-preferred coastwide measures and the combination of state/regional measures must achieve the same level of expected harvest. The appropriate level of harvest will be defined through the Percent Change Approach.

Improved statistical modeling tools are available for setting 2023 measures, including a Recreational Demand Model (RDM) and a Recreational Fleet Dynamics Model (RFDM), as described in more detail below. As described in more detail below, results of the RDM are available to project harvest in 2023 under status quo (2022) measures for summer flounder. While preliminary results of the RFDM are also available, given that model's inability to model slot limits at this time, the RFDM is currently thought to be over-projecting harvest given the slot limit in New Jersey in 2022. Given this constraint, staff recommend using the results of the RDM for development of the 2023 harvest target. The RDM suggests that the 80%, 90%, and 95% confidence intervals around expected harvest in 2023 under status quo measures would be below the 2023 RHL. This, in combination with the current summer flounder stock

status, would result in a **10% liberalization in harvest relative to the projected 2023 harvest under status quo measures**. The projected 2023 harvest under status quo measures is 8.38 million pounds, resulting in a harvest target of 9.21 million pounds under a 10% liberalization.

Staff recommend considering the results of the recent summer flounder management strategy evaluation (MSE)[1] in the development of 2023 recreational management measures, as discussed by the Council and Board in August 2022. As descried in more detail below, staff considered several modeled management procedures (or variations on them) for potential use as either regional measures under conservation equivalency or as non-preferred coastwide measures (if applicable) to achieve the 10% liberalization in harvest associated with the percent change approach.

As described below, to achieve the harvest target associated with a 10% liberalization, **staff recommend continuation of regional conservation equivalency, with associated non-preferred coastwide of a 17.5-inch minimum size, 3 fish bag limit, and season of May 1-September 30.** This is a slightly modified version of a set of measures evaluated through the summer flounder MSE. **In addition, staff recommend that the precautionary default measures remain at a 20-inch minimum size, a 2-fish possession limit, and an open season of July 1-August 31.**

Overview of Percent Change Approach

In June 2022, the Council and the Policy Board approved a new process for setting recreational measures called the Percent Change Approach.[2] They agreed to use this approach for summer flounder, scup, and black sea bass starting with 2023 measures. Under this approach, measures will aim to achieve a specified percent change in harvest compared to the expectation of harvest in the upcoming year(s) under current measures. Unlike the previous process, the recreational measures will no longer aim to achieve but not exceed the RHL. Instead, measures will aim to achieve a different level of harvest, which will vary based on the following two factors:

1) A confidence interval (CI) around an estimate of expected harvest in the upcoming two years under current measures compared to the average RHL for the upcoming two years and
2) Biomass compared to the target level, as defined by the most recent stock assessment.

The resulting percent change in harvest that measures should aim to achieve is summarized in Table 1. Information about how to apply this process to summer flounder for 2023 measures is described in more detail in later sections of the document.

It is worth noting that this process is intended to allow recreational measures to remain unchanged across two years, aligned with the timing of updated management track stock assessments, which are expected to be available every other year. However, measures will be set on a one-year cycle for 2023 given that 2023 is an interim year for the management track assessments. This process will be used for a two-year cycle starting with 2024-2025.

[1] Additional information and MSE results are available at https://www.mafmc.org/actions/summer-flounder-mse and in the summary document previously provided to the MC at: https://www.mafmc.org/s/MSE-Briefing-Document-for-MC-Oct-2022.pdf.

[2] See action documents and additional information at https://www.mafmc.org/actions/hcr-framework-addenda.

Table 1: Process for determining appropriate percent change in expected harvest when developing measures under the Percent Change Approach.

Column 1 **Future RHL vs Estimated Harvest**	*Column 2* **Biomass compared to target level (SSB/SSB_{MSY})**	*Column 3* **Change in Harvest**
Future 2-year average RHL is **greater than** the upper bound of the harvest estimate CI (harvest expected to be lower than the RHL)	**Very high** (greater than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%
	High (at least the target level, but no higher than 150% of target)	**Liberalization** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below the target stock size)	**Liberalization**: 10%
Future 2-year average RHL is **within** harvest estimate CI (harvest expected to be close to the RHL)	**Very high** (greater than 150% of target)	**Liberalization**: 10%
	High (at least the target level, but no higher than 150% of target)	**No liberalization or reduction:** 0%
	Low (below the target stock size)	**Reduction:** 10%
Future 2-year average RHL is **less than** the lower bound of the harvest estimate CI (harvest is expected to exceed the RHL)	**Very high** (greater than 150% of target)	**Reduction:** 10%
	High (at least the target level, but no higher than 150% of target)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (below the target stock size)	**Reduction** percent equal to difference between harvest estimate and 2-year avg. RHL, not to exceed 40%

Past Management Measures

RHLs for summer flounder were first implemented in 1993. Since then, they have varied from a high of 11.98 million lb in 2005 to a low of 3.77 million lb in 2017. From 1993-2000, coastwide measures were in place for all states and federal waters, with possession limits ranging from 3-10 fish and size limits ranging from 14.0-15.5 inches. Starting in 2001, conservation equivalency was implemented, and has been used as the preferred management system each year since (Table 1). Under conservation equivalency, individual states or multi-state regions set measures that collectively are designed to constrain harvest to the coastwide RHL. Federal regulations are waived and anglers are subject to the summer flounder regulations of the state in which they land. State-by-state conservation equivalency was adopted each year from 2001 through 2013, with each state implementing different sets of management measures. Each year from 2014 through 2022, the Board has approved the use of regional conservation equivalency, where some states form multi-state regions with the same measures. Through 2022, the combination of regional measures has been designed to constrain the coastwide harvest to the RHL.

In December 2021, the Council and Board adopted conservation equivalency for the summer flounder recreational fishery in 2022. They also agreed to allow for up to a 16.5% liberalization of state or regional measures given an increase in the RHL in 2022 as well as a projected harvest underage under 2021 measures. Many states adjusted their measures between 2021 and 2022. Region-specific possession limits in 2022 range from 2-5 fish with size limits ranging from 15-18.5 inches, with various seasons (Table 2).

Under conservation equivalency, the Council and Board must adopt two associated sets of measures: the non-preferred coastwide measures, and the precautionary default measures. The **non-preferred coastwide measures** are a set of measures that would be expected to constrain harvest to the appropriate coastwide target[3] if implemented on a coastwide basis (the same measures in all states and in federal waters). The combination of state or regional measures under conservation equivalency is designed to be equivalent to this set of non-preferred coastwide measures in terms of coastwide harvest. These coastwide measures are included in the federal regulations but waived in favor of state- or region-specific measures. **The non-preferred coastwide measures adopted in 2022 include a 4-fish possession limit, an 18.5-inch total length (TL) minimum size, and an open season from May 15-September 15.**

The **precautionary default measures** would be implemented in any state or region that failed to develop adequate measures to constrain or reduce landings as required by the conservation equivalency guidelines. **The precautionary default measures in 2022 include a 2-fish possession limit with a 20-inch TL minimum fish size and an open season from July 1-August 31.**

[3] Through 2022, the target level of harvest was the RHL. Starting with 2023, the target level of harvest will be defined by the Percent Change Approach.

Table 2: Summary of federal management measures for the summer flounder recreational fishery, 1996-2023.

Measure	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
ABC (m lb)	-	-	-	-	-	-	-	-	-	-	-	-	-	21.5
Recreational ACL (land+disc; m lb)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RHL (m lb)	7.41	7.41	7.41	7.41	7.41	7.16	9.72	9.28	11.21	11.98	9.29	6.68	6.22	7.16
Harvest - OLD MRIP (m lb)	9.82	11.87	12.48	8.37	16.47	11.64	8.01	11.64	11.02	10.92	10.5	9.34	8.15	6.03
% Over/Under RHL[c]	33%	60%	68%	13%	122%	63%	-18%	25%	-2%	-9%	13%	40%	31%	-16%
Harvest - NEW MRIP	15.02	18.52	22.86	16.7	27.03	18.56	16.29	21.49	21.2	18.55	18.63	13.89	12.34	11.66
Possession Limit	10	8	8	8	8	3	a	a	a	a	a	a	a	a
Size Limit (TL in)	14	14.5	15	15	15.5	15.5	a	a	a	a	a	a	a	a
Open Season	1/1 – 12/31	1/1 – 12/31	1/1 – 12/31	5/29 – 9/11	5/10 - 10/2	4/15 - 10/15	a	a	a	a	a	a	a	a
Measure	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
ABC (m lb)	25.5	33.95	25.58	22.34	21.94	22.57	16.26	11.3	13.23	25.03	25.03	27.11	33.12	33.12
Recreational ACL (land+disc; m lb)	-	-	11.58	10.23	9.07	9.44	6.83	4.72	5.53	11.51	11.51	12.48	14.64	14.90
RHL (m lb) - landings only	8.59	11.58	8.49	7.63	7.01	7.38	5.42	3.77	4.42	7.69	7.69	8.32	10.36	10.62
Harvest - OLD MRIP (m lb)	5.11	5.96	6.49	7.36	7.39	4.72	6.18	3.19	3.35	-	-	-	-	-
% Over/Under RHL[c]	-41%	-49%	-24%	-4%	5%	-36%	14%	-15%	-24%	1%	31%	-18%	-	-
Harvest - NEW MRIP	11.34	13.48	16.13	19.41	16.24	11.83	13.24	10.06	7.60	7.80	10.06	6.82	-	-
Possession Limit	a	a	a	a	b	b	b	b	b	b	b	b	b	-
Size Limit (TL in)	a	a	a	a	b	b	b	b	b	b	b	b	b	-
Open Season	a	a	a	a	b	b	b	b	b	b	b	b	b	-

[a] State-specific conservation equivalency measures.
[b] Region-specific conservation equivalency measures.
[c] Based on a comparison with old MRIP data through 2018 and new MRIP data starting in 2019.

Table 3: Summer flounder recreational fishing measures 2021-2022, by state, under regional conservation equivalency. Conservation equivalency regions in these years include: 1) Massachusetts, 2) Rhode Island, 3) Connecticut and New York, 4) New Jersey, 5) Delaware, Maryland, The Potomac River Fisheries Commission, and Virginia, and 6) North Carolina.

State	2021			2022		
	Minimum Size (inches)	Possession Limit	Open Season	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	17	5 fish	May 23-October 9	16.5	5 fish	May 21-September 29
Rhode Island (Private, For-Hire, and all other shore-based fishing sites)	19	6 fish	May 3-December 31	18	4 fish	May 3-December 31
RI 7 designated shore sites	19	4 fish[a]		18	2 fish[b]	
	17	2 fish[a]		17	2 fish[b]	
Connecticut	19	4 fish	May 4- September 30	18.5	4 fish	May 1-October 9
CT Shore Program (45 designed shore sites)	17			17		
New York	19			18.5		
New Jersey	18	3 fish	May 22-September 19	Slot limit 17-18	2 fish[c]	May 2-September 27
				18	1 fish[c]	
NJ Shore program site (ISBSP)	16	2 fish		16	2 fish	
New Jersey/Delaware Bay COLREGS	17	3 fish		17	3 fish	
Delaware	16.5	4 fish	January 1- December 31	16	4 fish	January 1- December 31
Maryland						
PRFC						
Virginia						
North Carolina[d]	15	4 fish	September 1-14	15	1 fish	September 1-30

[a] Rhode Island's 2021 shore program included a combined possession limit of 6 fish, no more than 2 fish at 17-inch minimum size limit.

[b] Rhode Island's 2022 shore program includes a combined possession limit of 4 fish; no more than 2 fish at 17 inch minimum size limit.

[c] New Jersey's slot limit includes a combined possession limit of 3 fish; two fish greater than 17 inches and less than 18 inches, and one fish greater than 18 inches.

[d] North Carolina's regulations have been restricted for all flounders in North Carolina (southern, gulf, and summer flounder) in recent years due to the need to end overfishing on southern flounder. North Carolina manages all flounder in the recreational fishery under the same regulations.

Recreational Catch and Landings Trends

In July 2018, the Marine Recreational Information Program (MRIP) released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology (i.e., a transition from a telephone-based effort survey to a mail-based effort survey). Recreational data included in this memo reflect revised MRIP data except where otherwise stated.

MRIP estimates for 2020 were impacted by the COVID-19 pandemic due to temporary suspension of the Access Point Angler Intercept Survey (APAIS) and headboat sampling. The National Marine Fisheries Service (NMFS) used imputation methods to fill gaps in 2020 data with data collected in 2018 and 2019. For example, the 2020 summer flounder harvest estimate for Maine through Virginia combined was developed using approximately 19% imputed data. For additional information, see the information on 2020 recreational harvest estimates posted at: https://www.mafmc.org/council-events/2021/sfsbsb-mc-july27.

Estimates of recreational dead discards in weight for 2020 and 2021 using the typical estimation methods are not currently available. The typical method relies on age and length information that is not currently available for these more recent years. As such, 2020-2021 estimates of dead discards in weight were generated by GARFO by applying the average weight of discarded fish in 2019 to the estimates of dead discards in number of fish generated by MRIP for 2020 and 2021.[4]

Table 3 provides the annual MRIP time series of recreational harvest (in number and weight), dead discards (in weight), and catch (in number of fish) for 2008-2021, as well as the estimates for waves 1-4 for 2022. Since 2008, the high of harvest is 19.41 million pounds or 6.60 million fish in 2013, and the low of harvest was in 2021 with 6.82 million pounds or 2.32 million fish harvested. Catch in numbers of fish (harvest plus live and dead releases) over the same time period has ranged from 23 million fish in 2021 to 59 million fish in 2010 (Table 3). Table 3 also shows the percent of summer flounder released[5] (relative to total catch in numbers of fish) and the mean weight of landed summer flounder each year from 2008-2021, and 2022 through wave 4.

[4] Specifically, the 2019 average weight of discarded fish was calculated using recent assessment update information. This average weight (1.07 lb) was applied to the proportion of MRIP live discards in number of fish (MRIP "B2s") that are assumed to die after being discarded (10% for summer flounder).

[5] Reported as released alive, with 10% of those live releases assumed to die post-release.

Table 4: Summer flounder recreational catch, landings, and dead discards under revised MRIP estimates, Maine through North Carolina, 2008-2021, all waves. 2022 preliminary estimates are shown through wave 4.

Year	Catch (mil fish)	Harvest (mil fish)	Harvest (mil lb)	Dead discards (mil lb)[b]	% Released (Released Alive)[a]	Average Weight of Harvested Fish
2008	39.48	3.78	12.34	4.34	90%	3.26
2009	50.62	3.65	11.66	5.48	93%	3.20
2010	58.89	3.51	11.34	5.97	94%	3.23
2011	56.04	4.33	13.48	5.98	92%	3.12
2012	44.71	5.74	16.13	4.79	87%	2.81
2013	44.96	6.60	19.41	4.67	85%	2.94
2014	44.58	5.37	16.24	4.61	88%	3.02
2015	34.14	4.03	11.83	3.47	88%	2.92
2016	31.24	4.30	13.24	3.27	86%	3.08
2017	28.07	3.17	10.06	3.30	89%	3.18
2018	23.55	2.41	7.60	2.21	90%	3.15
2019	30.74	2.38	7.80	3.04	92%	3.28
2020	33.25	3.49	10.06	3.19	90%	2.88
2021	22.73	2.32	6.82	2.19	90%	2.94
2022 (w1-4 only)	22.75	2.59	6.73	--	89%	2.60

[a] For summer flounder, 10% of recreational releases are assumed to die.

[b] As noted above, dead discards for 2020 and 2021 were calculated using the average weight of discarded fish from 2019 due to data availability issues.

Landings by state in recent years in thousands of pounds are shown in Table 4 including full year estimates for 2017-2021 and wave 1-4 estimates for 2022.

The percent of summer flounder harvest (in numbers of fish) from state waters (0-3 miles from shore) averaged 72% from 2017-2021 (Figure 1). Over the same time period, most harvest originated from private/rental mode trips (85%), while party/charter mode and shore mode accounted for an average of 4% and 11% of the harvest, respectively (Figure 2).

Table 5: Summer flounder recreational harvest MRIP estimates (in pounds), by state for all waves (January-December), 2017-2022. 2022 values are preliminary estimates through wave 4 (January-August).

	2017	2018	2019	2020	2021	2022 (w1-4)
MA	171,923	142,540	145,204	175,590	120,805	112,728
RI	596,905	603,752	837,108	479,590	163,104	249,073
CT	402,528	549,268	292,453	387,741	465,968	352,127
NY	4,214,222	2,385,311	2,441,732	2,389,691	1,156,832	2,224,184
NJ	3,601,688	3,154,541	3,229,057	5,491,681	3,780,046	2,661,589
DE	253,703	205,380	224,527	534,247	272,108	211,776
MD	171,498	121,760	206,373	187,228	192,796	151,920
VA	528,350	345,064	368,955	381,165	636,395	768,600
NC	147,426	92,032	52,873	37,936	27,492	0
Coast	10,088,243	7,599,648	7,798,282	10,064,869	6,815,546	6,731,997

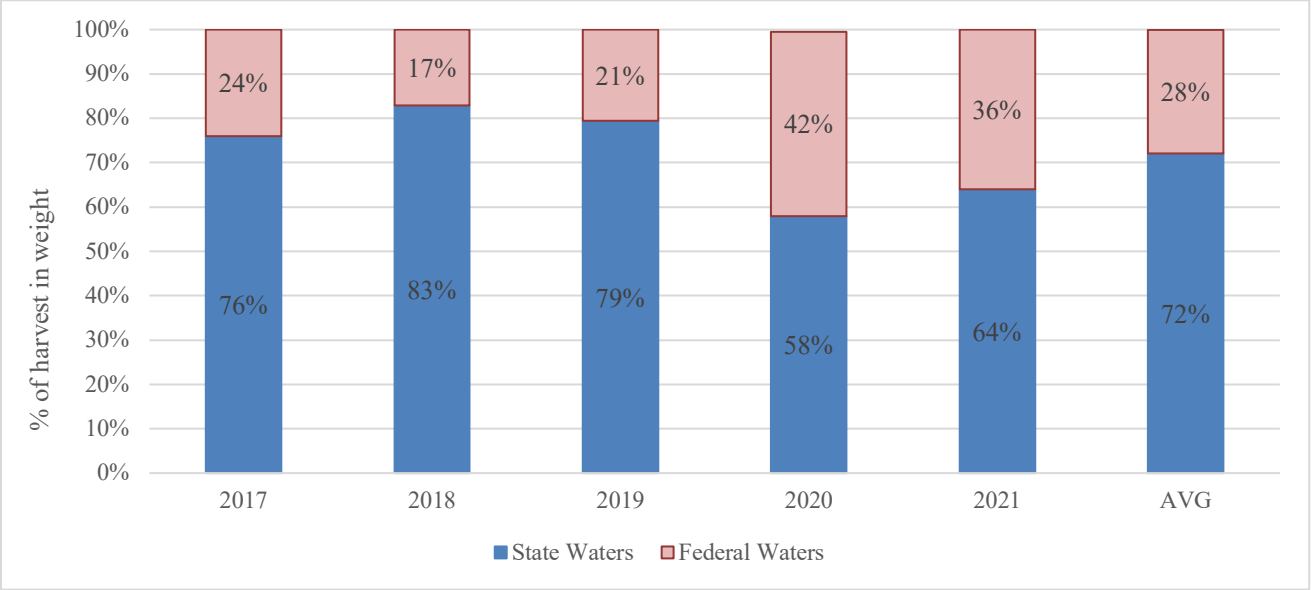


Figure 1: State vs. federal waters harvest (in weight) for summer flounder, 2017-2021. Fishing area information is self-reported by anglers.

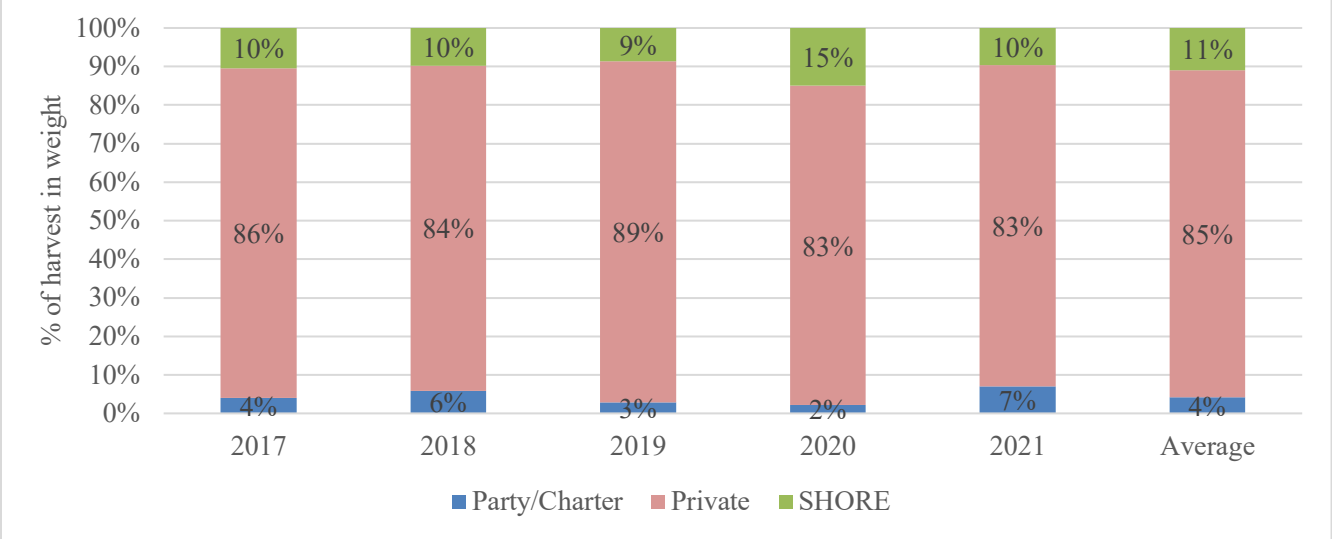


Figure 2: Summer flounder harvest by fishing mode (in weight), 2017-2021.

Percent Change in Harvest Needed for 2023

Comparison of 2023 RHL to Expected 2023 Harvest Under Current Measures

As previously stated, for 2023, summer flounder recreational measures will be set for a single year using the Percent Change Approach. The first step in using the Percent Change Approach for 2023 will be to generate an estimate of expected 2023 harvest under status quo (i.e., 2022) measures, with an associated confidence interval, and comparing that CI to the 2023 RHL (i.e., 10.62 million pounds). The Percent Change Approach does not define specific methods for calculating CIs. The MC should provide advice to the Council and Board on the appropriate CI for 2023.

In the past, expected harvest under status quo measures has been estimated by projecting harvest for the current year[6] and assuming that harvest in the following year would remain at similar levels if measures remained unchanged. This year, alternative methods of estimating harvest are available to improve projections of harvest in future years under a specified set of management measures. The Council and Commission have supported development of two statistical models to predict the impacts of recreational bag, size, and season limits on recreational harvest and discards of summer flounder, scup, and black sea bass.

The Northeast Fisheries Science Center has developed the **Recreational Demand Model (RDM)** for these species. This model was also used through the Summer Flounder MSE. This model accounts for the impacts of regulations, year class strength and population size, and angler preferences on harvest and discards. Year class strength is based on stock assessment projections and angler preferences are based on a survey of anglers from Maine through Virginia. This model can also account for the interaction of fishing regulations across species between summer flounder, scup, and black sea bass, meaning that it can incorporate information about how regulations for other species may impact harvest and discards of summer flounder. Additional information about this model can be found in this overview document: https://www.mafmc.org/s/fluke-RDM-overview-final-report.pdf.

Additionally, the **Recreational Fleet Dynamics Model (RFDM)** is being developed by scientists at the Rhode Island Department of Environmental Management and uses a shape constrained additive model to predict harvest and discards based on management measures. Covariates in the model include year, minimum size, wave, state, bag limit, a lagged recruitment variable, spawning stock biomass, and the RHL. The model is limited to analyzing the impacts of management strategies that have been used in the past. Novel strategies (e.g., slot limits which were used for the first time for summer flounder in New Jersey in 2022) cannot be directly analyzed through this model until MRIP data are available for years when those strategies were used. An R Shiny App is being developed for this model to allow the MC to modify management measures and view the resulting predicted harvest and discards. Additional information about this model can found in this overview document:
https://www.mafmc.org/s/RFDM_CompleteModel_WriteUps_Oct2022_FinalDraftclean.pdf

Both models allow for consideration of varying management measures at the state and wave level. Both models were peer reviewed by the Council's Scientific and Statistical Committee in September 2021[7] and have been improved since that time based on their recommendations.

[6] Staff typically project current year harvest using preliminary wave 1-4 data and assuming the same proportion of catch and landings by wave as in the previous year (with some adjustments to this methodology as appropriate).
[7] The final report from the SSC review is available at https://www.mafmc.org/s/05_Rec-Model-Peer-Review-Reports.pdf.

At the time of this memo, model results for expected 2023 harvest under status quo measures are available through the RDM. For the RFDM, while preliminary results are available, this model is not able to analyze slot limit measures at this time. As such, the model is currently thought to be over-projecting harvest for summer flounder and producing unrealistic estimates for 2023. The RFDM modelers are considering different methods of accounting for this to adjust the projections. Additional refinements to the RFDM are also in progress to incorporate 2021 data as suggested by the MC. Results may be available by the time of the November 15 MC meeting. During the meeting, the MC should discuss whether this model should be considered for development of 2023 measures given the inability to model slot limit regulations.

Model results from the RDM suggest that under status quo measures, projected harvest in 2023 would be 8.38 million pounds. Under 95, 90% and 80% CIs, the 2023 RHL is **greater than** the upper bound of the harvest estimate CI (i.e., harvest expected to be lower than the RHL; Table 6).

Council staff recommend use of the 80% CI and caution against use of the higher percentage CIs shown in Table 6. The Recreational Harvest Control Rule Framework/Addenda Fishery Management Action Team/Plan Development Team (FMAT/PDT) recommended use of an 80% CI under the Percent Change Approach based on an analysis of several years of MRIP data for each species. The FMAT/PDT agreed that an 80% CI would be appropriate in this context given variability in MRIP data from year to year, even under unchanged measures. A higher percentage CI would result in a wider range of values, which may not be appropriate given how the CI would be used in management under the Percent Change Approach. The FMAT/PDT made this recommendation prior to availability of preliminary results from the RDM and RFDM. Considerations about variability and uncertainty in projections of future harvest may differ under these models (e.g., as more variables are incorporated); however, because MRIP is a primary data source in these models, the rationale behind the 80% CI is still appropriate. In addition, the RDM and RFDM are expected to generate more accurate predictions of harvest compared to past methods, as they use a statistical modeling approach to account for more variables than the MC has traditionally been able to consider when using only MRIP data. Therefore, it would not be appropriate to use a CI resulting in a wider range of values than the 80% CI recommended by the FMAT/PDT based on their analysis of MRIP data.

Under a higher percent CI, the wider range of values is more likely to encompass the "true" harvest, but this also creates a range around a harvest estimate which is less meaningful for management. For example, the very wide ranges of expected harvest under the 95% CIs may not be realistic estimates of 2023 harvest. This creates a higher likelihood of ending up in a Percent Change Approach bin which is inappropriate for the "true" harvest. This could result in a required liberalization when a reduction is more appropriate, or vice versa, depending on the circumstances. A lower percentage CI may be especially appropriate for 2023 given this is the first year of using these models and applying the Percent Change Approach.

Based on how the values shown in Table 6 would be used under the Percent Change Approach (Table 1), all three of the CIs calculated for the RDM would result in the same outcome for summer flounder in 2023 (i.e., a 10% liberalization).

For all these reasons, **staff recommend using an 80% CI in the Percent Change Approach for 2023.** Staff recommend use of the same percentage CI across summer flounder, scup, and black sea bass for 2023. In addition, staff recommend the MC have additional discussions in 2023 to develop a more consistent approach to application of CIs under the Percent Change Approach for all applicable species in future years.

Table 6: RDM model results for estimated 2023 harvest under 2022 measures for summer flounder, including the mean, standard deviation, and 95%, 90%, and 80% confidence intervals of 35 simulations in the model. All values are in millions of pounds.

Median	95% CI	90% CI	80% CI	2023 RHL
8.38	6.72-10.47	7.04-10.03	7.56-9.52	10.62

Summer Flounder Stock Status

As shown in Table 1, the second step under the Percent Change Approach is to consider the most recent estimate of spawning stock biomass compared to the target level. According to the 2021 management track stock assessment (using data through 2019),[8] summer flounder is below the target stock size (estimated at 86% of the spawning stock biomass target). This puts summer flounder in the **"low" stock size category for the Percent Change Approach** (Table 1, Column 2).

Resulting Percent Change and Harvest Target

Applying the expected 2023 harvest under status quo measures and the most recent stock status for summer flounder results in a **10% liberalization** in harvest for summer flounder for 2023 (Table 1, Column 3). This change in harvest is relative to the projected harvest under status quo measures. Assuming the projected 2023 harvest under status quo measures referenced above (8.38 million pounds), the **resulting harvest target for summer flounder in 2023 would be 9.21 million pounds.**

Accountability Measures

Federal regulations include reactive accountability measures (AMs) for when the recreational summer flounder annual catch limit (ACL) is exceeded. This can include paybacks of ACL overages depending on stock status and the magnitude of the overage, as described below. ACL overages in the recreational fishery are evaluated by comparing the most recent 3-year average recreational ACL against the most recent 3-year average of recreational dead catch (i.e., landings and dead discards). If average dead catch exceeds the average ACL, then the appropriate AM is determined based on the criteria listed below. This reflects minor revisions to the AMs made through the Recreational Harvest Control Rule Framework/Addenda.

1. If the stock is overfished ($B < ½ B_{MSY}$), under a rebuilding plan, or the stock status is unknown: The exact amount, in pounds, by which the most recent year's recreational ACL has been exceeded, will be deducted in the following fishing year, or as soon as possible once catch data are available. This payback may be evenly spread over two years if doing so allows for use of identical recreational management measures across the upcoming two years.
2. If biomass is above the threshold, but below the target ($½ B_{MSY} < B < B_{MSY}$), and the stock is not under a rebuilding plan:
    - If only the recreational ACL has been exceeded, then adjustments to the recreational management measures (bag, size, and seasonal limits) would be made in the following year, or as soon as possible once catch data are available. These adjustments would take

[8] Available at: https://www.mafmc.org/s/c_2021_summer_flounder_MTA_report.pdf.

into account the performance of the measures and the conditions that precipitated the overage.

- If the most recent estimate of total fishing mortality exceeds F_{MSY} (or the proxy), then an adjustment to the recreational ACT will be made as soon as possible as a payback that will be scaled based on stock biomass. The calculation for the payback amount in this case is: (overage amount) * $(B_{msy}-B)/½\ B_{msy}$. This payback may be evenly spread over two years if doing so allows for use of identical recreational management measures across the upcoming two years. If an estimate of total fishing mortality is not available for the most recent complete year of catch data, then a comparison of total catch relative to the ABC will be used.

3. If biomass is above the target ($B > B_{MSY}$): Adjustments to the recreational management measures (bag, size, and seasonal limits) would be considered for the following year, or as soon as possible once catch data are available. These adjustments would take into account the performance of the measures and the conditions that precipitated the overage.

Average recreational catch was below the average recreational ACLs for summer flounder from 2019-2021, meaning that an AM has not been triggered for summer flounder (Table 6).

Table 7: Evaluation of summer flounder recreational AMs using the 2019-2021 average recreational ACL compared to the 2019-2021 average recreational dead catch.

	Recreational Harvest (mil lb)	Recreational Dead Discards (mil lb)	Total Dead Recreational Catch (mil lb)	Recreational ACL (mil lb)	% Over/ Under ACL
2019	7.80	3.04	10.84	11.51	-6%
2020[b]	10.06[a]	3.19[b]	13.25	11.51	+15%
2021	6.82	2.19[b]	9.01	12.48	-28%
Average	8.23	2.81	11.03	11.83	-7%

[a] 2020 recreational estimates were developed using imputation methods (incorporating 2018 and 2019 data) to account for missing 2020 APAIS data.

[b] As noted above, recreational dead discards in weight are typically provided by the NEFSC and are calculated using the same methods as the stock assessments for each species. Due to data availability issues, dead discards for 2020-2021 could not be calculated using the typical methods and instead were generated using alternative methods.

Summer Flounder MSE Results

The Council recently completed a recreational summer flounder MSE to 1) Evaluate the biological and economic benefits of minimizing discards and converting discards into landings in the recreational summer flounder fishery; and 2) Identify management procedures to effectively realize these benefits.

Results of the MSE were presented to the Council and Board in August 2022, and were discussed at the October 26, 2022 MC meeting. The management procedures considered via the MSE are listed for quick reference in Table 8 below; for additional information and a summary of the MSE results, see the document previously provided to the MC at: https://www.mafmc.org/s/MSE-Briefing-Document-for-MC-Oct-2022.pdf.

As discussed at these previous meetings, **results from the MSE suggest multiple management procedures outperform recent "status quo" management (specified as 2019 management measures in the MSE) at reducing discards and converting those discards into harvest while limiting risk to the summer flounder stock.** In August, the Council and Board agreed that the outcomes from the MSE

should be used to help inform potential recreational management options for summer flounder in 2023. In addition, they supported the use of the modeling approaches developed as part of the MSE (e.g., the RDM) to estimate recreational catch and harvest of summer flounder.

As discussed below, the MSE results were used to inform staff recommended non-preferred coastwide measures under conservation equivalency, as well as a staff recommendation to further exploring MSE management procedures for potential application under regional conservation equivalency measures.

Table 8: Summary of the seven different management procedures tested as part of the EAFM recreational summer flounder MSE. Each MP is labeled with the shorthand used in the display of model results. See the October 26 MC meeting materials for more information.

Management Procedure #	**Procedure Explanation**
1 (status quo)	**Status Quo:** 2019 regulations
2 (minsize-1)	**Status quo regions, modified size:** 2019 regulations but a 1 inch decrease in minimum size within each state to a minimum of 16 inches
3 (season)	**Status quo regions, modified season:** 2019 regulations but season of April 1 - Oct 31 for all states
4 (region)	**Modified regions:** MA-NY - 5 fish, 18 inch min, May 1 - Sept 31 NJ - 3 fish, 17 inch minimum, May 1 - Sept 31 DE-NC - 3 fish, 16 inch minimum, May 1 - Sept 31
6 (c3@17)	**Coastwide measures:** 3 fish possession limit, 17 inch minimum size, May 1 - Sept 30
7 (c1@16-19)	**Modified slot:** 1 fish from 16 inches - 19 inches, 2 fish 19 inches and greater, May 1 - Sept 30
8 (slot)	**True slot limit:** 3 fish possession limit between 16 inches and 20 inches, May 1 - Sept 30

[a] The numbering goes from 4 to 6 due to the removal of management procedure #5 from consideration. MP #5 included a 1 fish possession limit, 14 inch minimum size, and May 15-September 15 season.

2023 Staff Recommendation

The development of the MSE and past recreational measures processes have made clear that while there is some stakeholder interest in coastwide measures, it has been difficult to identify coastwide measures that don't disproportionately impact certain states or regions. The MSE process explored potential coastwide or more simplified regional measures that may be beneficial to further explore for future years; however, additional work is needed to evaluate how impacts vary by state.

Staff recommend continued application of regional conservation equivalency in 2023 to achieve the target level of harvest under the 10% liberalization for 2023 (9.21 mil lb). Additionally, **staff recommend applying some of the measures evaluated through the MSE (or modified versions of them) to the development of regional conservation equivalency measures as well as the non-preferred coastwide measures, as described below.**

Non-Preferred Coastwide and Precautionary Default Measures

Under conservation equivalency, a set of **non-preferred coastwide measures** must be identified. The non-preferred coastwide measures must consist of a minimum fish size, possession limit, and season for

2023 that if implemented on a coastwide basis, would be expected to achieve the same level of harvest as the conservation equivalency measures (i.e., would aim to achieve the 9.21 million pound harvest target). Under conservation equivalency, these measures are written into the federal regulations, but waived in favor of the state- or region-specific measures.

For 2022, the non-preferred coastwide measures include an 18.5-inch minimum fish size, 4 fish bag limit, and open season from May 15-September 15. Since conservation equivalency has been implemented at the state or regional level for many years, it has grown more difficult to predict the impacts of coastwide measures. This year, availability of recreational models improves the ability to analyze these measures. **The RDM suggests that the current non-preferred coastwide measures would be too restrictive** relative to the expected 2023 target level of harvest. With 35 simulation runs, the mean harvest projected under these measures was 5.26 million pounds, or 57% of the 9.21 million pound harvest target.

To inform adjustment of these measures, staff requested a model run with a set of coastwide measures considered through the MSE process: Management Procedure #6 consisted of a 17-inch minimum size, 3 fish bag limit, and a season from May 1-September 30. This management procedure was developed as part of the MSE to evaluate and address stakeholder input regarding regulatory equity and complexity. Other than the coastwide slot limit management procedures, this was the only "true" coastwide set of measures evaluated in the MSE, and is the set of measures most similar to the current non-preferred coastwide measures. Results of this run (35 simulations) suggest a mean harvest of 10.80 million pounds, which **exceeds the 10% liberalization target** by 17%.

While the RDM is not currently configured to run half-inch minimum size increments, it can provide harvest estimates within each one-inch size bin. The results of the previous run (MSE Management Procedure #6 with a 17-inch minimum size) estimated that approximately 28% of harvest was predicted to be landed in the 17-17.99 inch bin. Assuming that under a 17.5-inch size limit half of this amount of would be landed, this would adjust the total expected harvest from 10.80 million pounds to 9.28 million pounds, which is 101% of the staff recommended 2023 harvest target of 9.21 million pounds. Therefore, **staff recommend that the non-preferred coastwide measures in 2023 consist of a 17.5-inch minimum size, a 3 fish bag limit, and a season of May 1-September 30.**

As previously stated, the MC must also provide recommendations for **precautionary default measures.** The precautionary default measures are intended to be a deterrent against states/regions implementing measures inconsistent with the conservation equivalency guidelines and are not associated with any particular harvest target. In 2022, the precautionary default measures consist of a 20-inch minimum size, a 2-fish possession limit, and an open season of July 1-August 31. The current precautionary default measures would be much more restrictive than any measure an individual state would implement in 2023. As such, **staff recommend no changes to the current precautionary default measures**.

Conservation Equivalency Measures

The results of the MSE could inform development of regional measures under conservation equivalency, both in terms of considering what the MSE results suggest about how to improve recent management strategies, as well as by potentially informing specific combinations of management measures. The management procedures analyzed through the MSE were not meant to be specific proposals for use in 2023 or any specific future year, but were designed as examples intended to represent a realistic range and scope of regulations that may be of interest to managers and stakeholders. These management procedures were informed by extensive discussion with the MSE core stakeholder group. Modifications to management procedures of interest could be made to achieve the intended percent change for 2023 or a future year. Specifically, **staff recommend that under conservation equivalency (if adopted by the Council and Board), the Technical Committee explore measures similar to either of the following sets of measures, with adjustments as necessary to achieve the 10% liberalization under the Percent Change Approach:**

- **Management Procedure #2:** 2019 regulations but a 1-inch decrease in minimum size within each state to a minimum of 16 inches (except for NC), resulting in the regulations below for each state. Under this management procedure, special shore programs and separate Delaware Bay regulations could not be explicitly analyzed via the model, but the MC could discuss recommending that they remain in place given the expected small percentage of the overall harvest.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	16	5 fish	May 23-October 9
Rhode Island	18	6 fish	May 3-December 31
Connecticut	18	4 fish	May 4- September 30
New York	18		
New Jersey	17	3 fish	May 24- September 21
Delaware	16	4 fish	January 1- December 31
Maryland			
Virginia			
North Carolina	15	4 fish	January 1-September 3

- **Management Procedure #7 - Modified Slot:** 1 fish from 16-19 inches, 2 fish 19 inches and greater, May 1 - Sept 30 in all states.

As described above and as discussed at the October 26 MC meeting, all management procedures (see Table 8) except for one (MP#3), outperformed the status quo alternative across most performance metrics, including those that reduce recreational discards and provide for increased harvest opportunities. During the October 26 meeting, the MC recommended against further consideration of MP#3 given that it did not perform notably better than the status quo under most metrics, and against MP#8 due to the inability for anglers to retain larger trophy fish as well as the slightly increased risk of overfishing. MP#4 did not seem to generate quite as much interest or discussion from the MSE core stakeholder group, the Council and Board, or the MC. The results of MP#6 are considered above in the staff recommendation for non-preferred coastwide measures.

The results of the MSE indicate that MP#2 and MP#7 both nearly double the average number of harvested fish per trip, the percent of trips that kept a fish, and double the harvest:discard ratio over the 26-year time

frame of the simulation. The average number of discards per trip was reduced by 16% (for MP#2) and 11% (for MP#7). Both procedures resulted in angler satisfaction approximately three times higher than the status quo (Table 9). Both options would lower the minimum size in most states and allow for greater access from the shore mode fishery. Additional information on the MSE results is available at https://www.mafmc.org/actions/summer-flounder-mse.

Table 9: Summary of model outputs for select performance metrics for MP#1 (status quo), MP#2, and MP#7 under the baseline operating model configuration.

Performance Metric	MP#1	MP#2	MP#7
Percent of trips that harvest one fish	0.193	0.284	0.35
Average number of harvested fish per trip	0.274	0.471	0.458
Harvest:Discards	0.102	0.207	0.189
Average number of discards per trip	2.91	2.45	2.58
Consumer surplus (angler satisfaction) per trip	3.703	12.896	14.352
Total recreational expenses (millions of $)	470.9	492.3	499.3
Total Spawning Stock Biomass (mature male & female) in metric tons	67,514	60,504	61,088
Percent of female harvest	0.676	0.607	0.602
Total catch (recreational+commercial) in metric tons	15,935	16,468	16,031
Total recreational removals (harvest+dead discards) in metric tons	6,331	8,157	7,685
Total number of recreational trips (millions)	11.22	11.72	11.91
Percent of trips harvesting a trophy fish (>28 inches)	0.017	0.008	0.008

Staff requested initial RDM runs to estimate 2023 harvest under both sets of measures. The resulting estimated mean harvest for 35 simulations, along with associated CIs, is shown in Table 8. The results indicate that these management procedures would be expected to result in harvest above the specified target under the 10% liberalization. As such, **modifications to the measures would be needed to be consistent with the required application of the Percent Change Approach in 2023.** Due to time constraints for running the model, staff were not able to request additional runs with modified versions of these measures for this memo; however, the MC could comment on additional runs that may be informative for development of regional measures should conservation equivalency be adopted as the preferred management approach for 2023.

Table 10: RDM model results for estimated 2023 harvest under two staff requested MSE management procedure runs for summer flounder, including the mean, standard deviation, and 95%, 90%, and 80% confidence intervals of 35 simulations in the model. All values are in millions of pounds.

Management Procedure	Mean	95% CI	90% CI	80% CI	2023 Harvest Target Under 10% Liberalization[a]
MP #2 (Status quo regions, modified size)	**10.86**	8.72-13.42	9.14-12.67	9.69-11.98	9.21
MP#7 (Modified Slot)	**10.31**	8.53-12.11	8.86-11.53	9.31-11.53	

[a] Staff recommended target resulting from RDM-projected mean 2023 harvest under status quo measures = 8.38 million pounds.

In summary, staff recommend that the summer flounder recreational fishery be managed under regional conservation equivalency in 2023. As previously stated, use of the RDM in the Percent Change Approach indicates a liberalization of 10% in harvest should be made relative to expected 2023 harvest under status quo measures, resulting in a harvest target of 9.21 million pounds. Staff recommend non-preferred coastwide measures informed by MSE Management Procedure #6, including a 17.5-inch TL size limit, a 3-fish possession limit, and an open season from May 1-September 30, 2023, as well as precautionary default measures that include a 20-inch TL minimum size, 2 fish possession limit, and open season from July 1-August 31, 2022. Staff recommend that under conservation equivalency, the Technical Committee and Board consider using the results of the summer flounder MSE to inform development of regional measures, specifically some variation of Management Procedures #2 or #7.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 2, 2022

To: Council and ASMFC Policy Board

From: Kiley Dancy, Julia Beaty, and Hannah Hart, Staff

Subject: Previously Initiated Recreational Reform Items

Overview

This document provides background information to assist the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (Commission) Interstate Fishery Management Program Policy Board (Policy Board) in discussing next steps, including the priority level, for two previously initiated Recreational Reform Initiative topics. This includes an **amendment** to consider options for managing for-hire recreational fisheries separately from other recreational fishing modes (referred to as sector separation), as well as options related to recreational catch accounting, such as private angler reporting and enhanced vessel trip report (VTR) requirements. It also includes a **technical guidance document** to consider developing guidelines for best practices for identifying and smoothing Marine Recreational Information Program (MRIP) outlier estimates, use of preliminary current year MRIP data, and guidelines for maintaining status quo recreational measures. These topics are summarized below.

Background

In recent years, the Council and Commission have faced several challenges when setting recreational management measures (i.e., recreational bag, size, and season limits) for summer flounder, scup, black sea bass, and bluefish, including concerns related to uncertainty and variability in the recreational fishery data provided by MRIP, the need to change measures (sometimes annually) based on those data, as well as the perception that measures are not reflective of stock status. In addition, management measures have not always had their intended effect on overall harvest.

In October 2020, the Council and Policy Board initiated two management actions (a framework/addenda and an amendment) to address several recreational issues for all four species. The full list of prioritized topics is shown in Table 1. These actions are collectively referred to as the Recreational Reform Initiative. The goals of the Recreational Reform Initiative are to (1) provide **stability** in the recreational bag, size, and season limits, (2) develop strategies to increase management **flexibility**, and (3) achieve **accessibility** aligned with availability/stock status for all four species.

In December 2020, staff recommended addressing some of the prioritized topics through a technical guidance document, rather than a framework/addenda or amendment (as reflected in Table 1).

In February 2021, the Council and Policy Board agreed to prioritize the Recreational Harvest Control Rule Framework/Addenda before further developing the remaining topics. The Council and Policy Board took final action on the framework/addenda in June 2022, selecting a new approach for setting recreational measures called the Percent Change Approach. This action is currently pending federal implementation.

The Council and Policy Board agreed that the Percent Change Approach should be used to set recreational management measures starting in 2023 and should sunset no later than the end of 2025, with the goal of implementing a new and improved approach in time for setting 2026 measures. Therefore, although many Recreational Reform Initiative topics were addressed through the Recreational Harvest Control Rule Framework/Addenda (e.g., setting multi-year recreational measures, considering uncertainty when determining if measures should change), these topics will be revisited in the upcoming years as the Council and Commission further consider the appropriate replacement for the Percent Change Approach after the sunset period.

During their December 2022 meeting, the Council and Policy Board will discuss next steps for the previously initiated Recreational Sector Separation and Catch Accounting Amendment, as well as the technical guidance document. If the Council and Policy Board agree that these are priority topics for 2023, in early 2023 staff will draft action plans and timelines for development of these actions.

Table 1: Topics identified by the Council and Policy Board in October 2020 as priority Recreational Reform Initiative topics. To date, only the Recreational Harvest Control Rule has been fully developed. The remaining topics will be considered through separate, future management actions and guidance document development if they remain priorities of the Council and Policy Board.

Technical Guidance Document	Framework/Addenda	Amendment
• Process for identifying and smoothing outlier MRIP estimates. • Evaluate the pros and cons of using preliminary current year MRIP data. • Develop guidelines for maintaining status quo measures.	• Envelope of uncertainty approach for determining if changes to recreational management measures are needed.* • Develop process for setting multi-year recreational management measures.* • Consider changes to the timing of recommending federal waters measures. • Recreational Harvest Control Rule.*	• Recreational sector separation. • Recreational catch accounting.

*These topics were considered through the Recreational Harvest Control Rule Framework/Addenda and are incorporated into the alternative selected for implementation (i.e., the Percent Change Approach). However, the Council and Policy Board agreed that the Percent Change Approach will sunset no later than the end of 2025, with a goal of implementing a new approach in time for setting 2026 measures. Therefore, these topics may warrant further consideration by the Council and Policy Board when developing the replacement for the Percent Change Approach after the sunset period.

Technical Guidance Document

As previously stated, the Council and Policy Board agreed that some Recreational Reform Initiative topics should be developed through a technical guidance document, rather than a framework/addenda or amendment. Some topics are highly technical in nature and may not require changes to the FMPs, depending on the specific changes desired by the Council and Policy Board. Previously considered topics are summarized below. Additional topics may also be considered, if desired by the Council and Policy Board. For example, some topics which were partially developed through the Recreational Harvest Control Rule Framework/Addenda (e.g., use of confidence intervals) may warrant further development through a technical guidance document.

Guidelines for Identifying and Smoothing Outlier MRIP Estimates

In recent years, several MRIP estimates of black sea bass harvest were identified as outliers and treated differently in the management process. The first instance occurred when the black sea bass recreational harvest estimate for wave 6 in New York in 2016 (all modes combined) was identified as an outlier by the Commission's Technical Committee. A revised estimate was used when states developed 2018 recreational measures through the Commission process. This outlier estimate was also one of multiple pieces of information used by the Council's Scientific and Statistical Committee when determining the appropriate uncertainty buffer between the overfishing limit and the acceptable biological catch (ABC) limit starting in September 2019.

The Technical Committee also identified the 2017 New Jersey wave 3 private/rental mode black sea bass harvest estimate as an outlier. A modified value was used when setting New Jersey's 2018 management measures.

The 2019 black sea bass operational stock assessment and the subsequent 2021 management track assessment increased the coefficient of variation (CV) on the component of catch data which includes recreational catch for 2015-2017 in acknowledgement of the 2016 and 2017 outliers.

In early 2022, the Commission's Technical Committee performed an analysis of black sea bass harvest estimates at the state/wave/mode/year level for 2018-2021. This analysis identified over 30 potential outliers. This analysis was used by the Council and the Summer Flounder, Scup, and Black Sea Bass Management Board (Board) to recommend a smaller reduction in coastwide harvest in 2022 than would have been required if the outliers had not been adjusted.

In all cases described above, the specific methods used for identifying and modifying outlier MRIP estimates, as well as how those estimates were used in the management process, varied.

The Council and Policy Board agreed that it would be beneficial to adopt a standardized process for identifying and adjusting (if needed) outlier MRIP estimates. This process should be applied to **both high and low outlier estimates as appropriate** and could be used for all four species. If guidelines are adopted for standardizing the process of identifying and smoothing outlier estimates, it will be important for the Monitoring and Technical Committees to maintain the discretion to deviate from this process if they provide justification for doing so as it may not be possible to select a single process which would be most appropriate in all circumstances.

The process currently used by the Monitoring and Technical Committees to recommend recreational management measures is not codified in the FMPs; therefore, development of guidelines for use of the data when setting measure would not necessarily require an FMP framework/addendum or amendment. However, if the Council and Policy Board wish to place

restrictions on how outliers are identified, modified, and considered in the management process, then an FMP framework/addendum may be necessary.

Evaluate the Pros and Cons of Using Preliminary Current Year Data

Prior to availability of improved analysis tools in 2022 (i.e., the Recreational Demand Model and the Recreational Fleet Dynamics Model),[1] Council staff typically developed projections of recreational summer flounder, scup, and black sea bass harvest late in the current year to compare against the upcoming year's recreational harvest limit (RHL). These projections typically combined preliminary current year harvest estimates through wave 4 (i.e., through August) with the proportion of harvest by wave in one or more past years.[2] The Monitoring Committee would review these projections and recommend revisions or an alternative methodology as appropriate. The specific data used (e.g., one or multiple previous years) varied on a case-by-case basis.

A different process has typically been used for bluefish. Historically, expected bluefish recreational harvest has been evaluated when considering a recreational to commercial transfer. Expected bluefish harvest was typically based on the previous year or a multiple year average and did not account for preliminary current year data.

These different methodologies were developed based on the recommendations of the Monitoring Committees. The FMPs do not prescribe which data should be used to develop recreational management measures, beyond requiring use of the best scientific information available. The new statistical analysis tools now available for summer flounder, scup, and black sea bass (i.e., the Recreational Demand Model and the Recreational Fleet Dynamics Model) do not require use of the preliminary current year data. However, they could consider these data if appropriate.

The Council and Policy Board previously indicated a desire to evaluate the appropriateness of using preliminary current year data when setting measures for the upcoming year. If there is a desire to establish guidelines on which data to use, this could be considered through a technical guidance document. However, if the Council and Policy Board wish to place restrictions on the use of certain types of data (e.g., preliminary current year data), then an FMP framework/addendum may be necessary.

Develop Guidelines for Maintaining Status Quo Recreational Management Measures

The Council and Policy Board previously indicated a desire to consider standardized guidelines for comparing both recreational harvest data (all considerations described above related to outliers and preliminary data could apply) and multiple stock status metrics (e.g., biomass, fishing mortality, recruitment) when deciding if measures should remain unchanged. For example, poor or declining stock status indicators could require changes when status quo would otherwise be preferred. This topic was considered through several alternatives in the

[1] For more information, see the Tab 5 briefing materials available at https://www.mafmc.org/briefing/december-2022. These models are not currently available for bluefish.

[2] In December 2020, MRIP announced new standards related to the dissemination of recreational catch and harvest estimates. Stating in early 2023, instead of publishing wave-level estimates, the estimates will be published as cumulative estimates every two months. Wave-level estimates will continue to be available by request; therefore, this may not require a change to how the Monitoring Committee has typically projected current year harvest for summer flounder, scup, and black sea bass; however, it would require additional steps to obtain wave-level data. More information is available at https://www.fisheries.noaa.gov/feature-story/noaa-fisheries-establishes-recreational-fishing-survey-and-data-standards.

Recreational Harvest Control Rule Framework/Addenda and is partially incorporated into the Percent Change Approach which was selected for implementation through that action.

The idea behind this concept was to establish a pre-determined, standardized checklist of metrics to evaluate when determining if recreational management measures can remain unchanged, should be more restrictive, or can be liberalized. For example, if projected harvest falls within a pre-defined range above or below the next year's RHL, if recruitment and biomass trends are stable or increasing, if fishing mortality trends are stable or decreasing, and if fishing effort trends are stable or decreasing, then status quo measures could be justified. Alternatively, if projected harvest exceeds a pre-determined range above and below the RHL, if recruitment or biomass trends are declining, if fishing mortality is above the target level, or if fishing effort shows increasing trends, then more restrictive management measures may be needed. Decisions related to future management measures would be more complicated when these indicators show a mix of positive and negative signals. Therefore, it may be desirable for the Monitoring and Technical Committees to maintain the discretion to deviate from the pre-determined guidelines based on annual considerations.

As previously noted, the FMPs do not prescribe which data should be used to develop recreational measures, beyond requiring use of the best scientific information available. If the Council and Policy Board wish to adopt guidelines on how to evaluate the available data, then this could be considered through a technical guidance document. However, if the Council and Policy Board wish to establish requirements, this would require a framework/addendum or amendment.

Recreational Sector Separation and Catch Accounting Amendment

Recreational Sector Separation

Recreational sector separation would entail managing the for-hire components of the recreational fisheries separately from anglers fishing on private or rental boats and from shore. This could be considered through either separate allocations to the for-hire sector and private anglers (including anglers fishing from private or rental boats and from shore), or as separate management measures for the two recreational sectors without a fully separate allocation, as summarized below.

Sub-Allocation of the Recreational Annual Catch Limit or RHL

The Council and Policy Board could consider options to specify within the FMP a percentage allocation to the for-hire sector. This allocation could be a percentage of either the ABC, the recreational annual catch limit (ACL), or the RHL. There are several potential ways to create a separate allocation as described below and illustrated in Figure 1. The differences between some options are nuanced, and the pros and cons of each approach should be further explored.

A. **Current FMPs:** The ABC is allocated into a recreational ACL and a commercial ACL for all four species. Projected recreational discards are removed from the recreational annual catch targets (ACTs) to derive the RHLs. Both the private and for-hire recreational sectors are held to a single combined recreational ACL, recreational ACT, and RHL. Evaluation of potential overages, and consequences for those overages, are considered for all recreational modes combined.
B. **Separate ACLs:** Under this approach, the ABC would be allocated three ways: into a private recreational ACL, a for-hire recreational ACL, and a commercial ACL.

C. **Recreational Sub-ACLs:** Under this approach, the ABC would remain divided into the recreational ACL and commercial ACL. The recreational ACL would be further allocated into private and for-hire sub-ACLs.
D. **Separate RHLs:** Under this approach, the private and for-hire sectors would remain managed under a single recreational ACL. Separate RHLs would be developed for each sector for the purposes of determining management measures. This approach would include separate management of harvest only as dead discards are not included in RHLs and would be accounted for at the ACL level. Separation at the RHL level does not represent full separation and would need to include joint accountability to a combined recreational ACL.

Note that any approach creating separate ACLs or sub-ACLs would require the development of corresponding separate AMs.

For all approaches listed above, consideration would need to be given to the data and methods to use, including:

- How to use MRIP and/or VTR data in the allocations;
- Whether to allocate using catch (landings and dead discards) or harvest (related to the question of whether to allocate at the ACL or RHL level);
- Whether to allocate in numbers of fish or pounds;
- The base years or other method of evaluating this recreational sector data.

Many scoping comments on the Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment. expressed an interest in sector separation to make better use of for-hire VTR data, which some stakeholders perceive as being more accurate than the MRIP for-hire estimates. Vessels with federal for-hire permits are required to submit VTRs for every trip. However, there are also concerns about the accuracy of self-reported VTR data. In addition, VTR data include estimates of numbers of fish, but not weight of fish, so incorporating VTR data into allocations would require either establishing allocations in numbers of fish, developing a method to estimate weights of harvested and discarded fish from the numbers reported on VTRs, or adding a required data field for weight to VTRs.

Most states do not require state-only permitted vessels to submit VTRs. Therefore, data from for-hire vessels without federal permits would be missing if VTRs were used to determine for-hire allocations. Data from some state-specific VTR programs (e.g., New York) are incorporated into the MRIP estimates of for-hire effort; however, they are not incorporated into the MRIP estimates of catch as they have not been validated.

Uncertainty in the MRIP data increases as it is broken down by wave, state, and mode. Therefore, the Council and Board would need to consider whether the benefits of sector separation outweigh the drawback of increased uncertainty when using mode-specific data to set and evaluate catch limits, harvest limits, and/or recreational measures. Considerations related to identifying and smoothing outlier MRIP estimates, as described earlier in this document, could also apply to this topic.

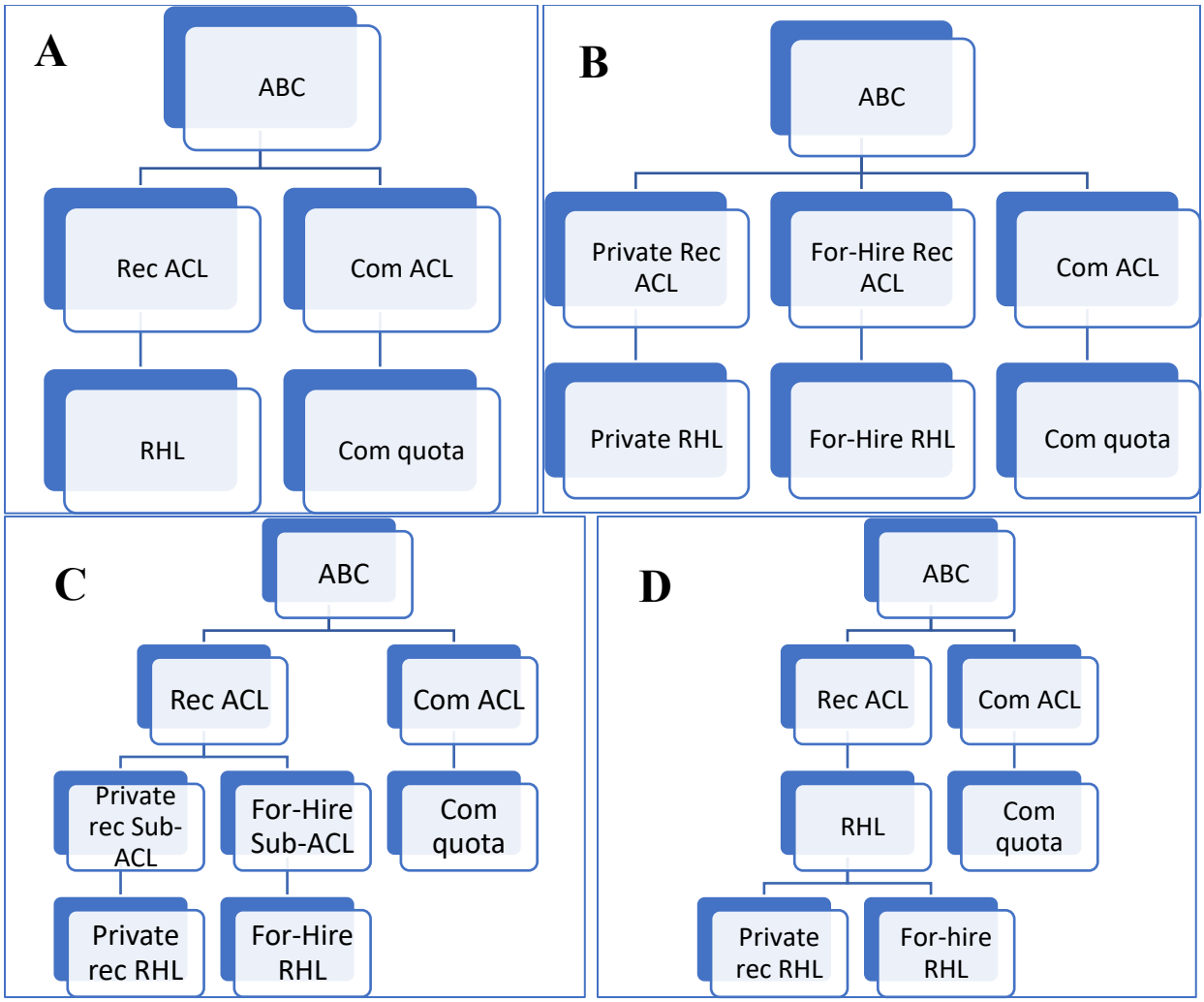


Figure 1: Conceptual flowcharts of potential recreational sector separation configurations including A) status quo, B) separate ACL allocations, C) sub-ACL allocations, and D) separate RHLs.

Separate Management Measures for For-Hire vs. Private/Rental and Shore Modes Without Separate Allocations

Rather than creating a separate allocation for the for-hire sector, a degree of sector separation could be achieved by setting different management measures to account for the differing priorities and data for for-hire vs. private anglers (including the private/rental and shore modes).

Separate management measures by recreational sector are currently used in the bluefish fishery in federal and state waters and in some state waters for scup and black sea bass.

It could be beneficial to develop a policy for how sector-specific measures should be developed, how accountability should be evaluated, and how adjustments would be applied to both recreational sectors. Such a policy could clarify the process for stakeholders and managers, reducing process uncertainty and increasing transparency when setting recreational measures.

Creating a policy for separate measures for for-hire vs private anglers does not require an amendment. This could possibly be done through specifications, or if not, through a

framework/addendum. If separate allocations were created (see previous section), describing the process for setting separate recreational measures may be an inherent part of that option.

Recreational Catch Accounting

The theme of improved recreational catch accounting was prominent in many scoping comments for the Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment. Examples of changes recommended through scoping are listed below. The intent behind these recommendations is to reduce uncertainty in the recreational data. It is worth noting that MRIP is currently considered the best scientific information available for the recreational fisheries and will continue to be used for stock assessments and catch limit evaluations for the foreseeable future. MRIP is a national-level program and the Council and Commission have a very limited ability to influence changes to the MRIP estimates.

- **Private angler reporting:** Private angler reporting has been explored in specific fisheries in other regions, and as of August 2020 is required for blueline and golden tilefish north of the North Carolina/Virginia border. The Council and Policy Board should consider the feasibility of private angler reporting for summer flounder, scup, black sea bass, and bluefish given that these fisheries take place in state and federal waters, from shore and from private and for-hire vessels, and that there are millions of directed trips per year for each species (e.g., an estimated 8.7 million angler trips for which summer flounder was the primary target, 2.7 million for which scup was the primary target, 1.4 million for which black sea bass was the primary target, and 5.3 million for which bluefish was the primary target in 2019). Given the scale of these recreational fisheries, mandatory private angler reporting may be a challenge to implement. Thorough consideration should be given to the potential levels of non-compliance and how this may impact the resulting data. Lessons learned from other private angler reporting programs should be evaluated and considered.
- **Tagging programs:** A few scoping comments suggested that anglers be issued tags for a specific number of fish each year. Tagging programs are used in some recreational fisheries, but they may be more appropriate for species with much lower harvest levels than summer flounder, scup, black sea bass, and bluefish. Consideration should be given to the pros and cons of moving forward with this approach compared to a traditional possession limit, especially considering the millions of targeted recreational trips for these species. Ensuring that the program is fair and equitable is a challenge. For example, consideration would need to be given to how many tags can be issued, who receives tags, how they are distributed, and how the program is administered.
- **Mandatory tournament reporting:** A few scoping comments recommended mandatory catch reporting for recreational fishing tournaments. Others have questioned the value of mandatory reporting for tournaments given that tournament catch likely constitutes a very small percentage of total recreational catch. An evaluation of catch of these four species in tournaments has not been performed and may be complicated by the lack of a centralized list of tournaments which would catch these species. Tournament catch of these species is included in the MRIP estimates, but is not specifically designated as tournament catch.
- **Enhanced VTR requirements:** A few scoping comments recommended additional VTR requirements, such as requiring VTRs for for-hire vessels that do not have federal permits

and reinstating “did not fish” reports for federal permit holders to better understand fishing effort.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

East Coast Climate Change Scenario Planning: Update for Commission and Council Meetings

December 2022 Council Meeting

November 30, 2022

Introduction

The East Coast Climate Change Scenario Planning initiative is being conducted by East Coast fishery management organizations to explore future governance and management issues related to climate change and fishery stock distributions. Scenario planning is a tool that managers can use to test decisions or develop strategy in a context of uncertain environmental, social, political, economic, or technical factors. It is a structured process for managers to explore and describe multiple plausible futures, termed "scenarios," and consider how to best adapt and respond to them.

The Commission and Councils have been receiving updates on the activities of the initiative. This document provides an overview of what to expect at the upcoming Council meeting. Additional information is available at: https://www.mafmc.org/climate-change-scenario-planning.

Council and Commission Meetings: November/December 2022

At their respective November and December meetings, the ASMFC, MAFMC, SAMFC, and NEFMC will have a workshop for in-depth discussions of the scenarios.

In these workshops, each of the management bodies will consider questions such as:

- Under each scenario, what are the challenges and opportunities that fisheries governance and management would face?
- How well would our current fishery governance and management arrangements cope if these conditions were to occur?
- What needs to change in fisheries governance and management to prepare for these possibilities?
- What are the tools and processes that need to be advanced now to ensure that fisheries are governed and managed effectively in an era of climate change?

The Council is asked to review three documents in preparation for this discussion:

1. A detailed workshop agenda;
2. A Scenario Narratives document that outlines each of the four future scenarios in detail; and
3. A shorter Summary of Manager Sessions document. This contains an initial set of ideas generated by a cross-section of fishery managers from participating management organizations during brainstorming sessions in September/October 2022.

The outcome of discussions at the November/December Council and Commission meetings will be a set of ideas and recommendations from each management body to be considered at a summit meeting in February 2023.

Next Steps: Applications Summit Meeting, February 2023

An in-person summit meeting is planned for February 15-16 2023, targeting approximately 50 participants from the participating management organizations. The summit meeting will serve as a venue to discuss the input from manager sub-group and individual management body sessions, with the goal of developing a set of governance, management, and monitoring potential actions from the scenario planning process. Potential actions generated at the summit will be refined into a final report following the meeting. These potential actions may include both near-term and long-term priorities. Some may be actions that could be undertaken by individual management bodies while others may be recommendations for policy changes that would require interjurisdictional coordination and/or legislative changes.

Draft Agenda for MAFMC East Coast Scenario Planning Discussion
December 14, 2022
Annapolis, MD

9:00 am	Introduction, Background, and Session Objectives
9:15 am	Review and Discuss Scenarios and Potential Actions • Brief review of four scenarios • Summary of challenges, opportunities, and potential actions identified in manager sessions • Do you agree with/recognize the challenges, opportunities and possible actions identified for each scenario? • What else is important to note about each scenario that is not yet covered? What other challenges, opportunities, and potential actions would you add?
10:15 am	Polling Questions • Which scenario is closest to describing the situation as you see it today? • Which scenario do you believe is most likely to play out by 2042?
10:20 am	Public Comment
10:30 am	Break
10:45 am	Recurring Ideas and Main Takeaways • Discuss the nine common, cross cutting issues identified in the manager sessions summary. Do all of these feel relevant and important to address? ○ Ranking exercise: Council members will identify the recurring/common themes they feel are most important to discuss at the summit • What additional cross cutting themes should be added to this list? • Which issues are likely to be critical to address across all scenarios? Which actions are likely to be productive regardless of scenario?
11:15 am	Prioritization of Key Discussion Topics for the Summit Meeting • What are the most important cross cutting themes or issues that you would like to see addressed at the Summit meeting? • What specific recommendations would you propose be considered at the Summit? • As we prepare for the Summit Meeting, what should the Core Team be mindful of?
11:50 am	Public Comment
12:00 pm	Adjourn

Introduction

This document outlines four draft scenarios that describe different possible futures for east coast fisheries in an era of climate change. The scenario framework is based on initial conversations held at a scenario creation workshop on June 21-23, 2022, attended by approximately 75 east coast fishery stakeholders and support staff. The draft scenarios were subsequently refined, based on comments received at two 'scenario deepening' webinars attended by over 100 fishery stakeholders.

Two core questions about the future - critical uncertainties - form the basis for the scenario framework:

1. What happens to stock production/species productivity by 2040 as climate change continues? Does it result in declining productivity (alongside worsening habitat, and low rates of species replacement), or is productivity mostly maintained (with adequate habitat and sufficient levels of species replacement)?
2. How unpredictable are ocean conditions, and how well is science able to assess and predict stock levels and locations by 2040? Do conditions become far more unpredictable, where existing science is clearly unable to provide much useful information, or are conditions sufficiently predictable to allow science to provide mostly accurate information about stocks and location?

Combining these uncertainties results in a 2x2 matrix that creates four distinct quadrants. None of these quadrants are predictions of what will happen in the next 20 years. Instead, they merely outline what might happen to ocean conditions, stocks and other changes to coastal communities. The scenarios also contain storylines and suggestions as to how fishing industry participants, managers, other ocean use sectors, and seafood consumers might adapt, react to and prepare for such conditions. We have often used specific examples as devices to add detail and color to the scenarios. These are meant as illustrations and not as specific suggestions for what will happen to a particular species, region or management action.

While the scenarios are designed to be divergent from each other, it is also important to acknowledge that there are some aspects that are broadly predictable over the next 20 years, so these elements will be reflected in all of the scenarios.

Across the scenarios, we can assume that ocean temperatures will increase in the next 20 years which will affect marine species biology and distribution. Regions are likely to exhibit differences in seasonal temperatures, and primary production will vary across different regions. We can expect that sea levels will rise. In terms of economic and social changes, it is likely that the coastal population will grow, and new and changing ocean

uses will create more competition - for space and labor - for fisheries. These factors are features of each of the scenarios, but their impact might be different across quadrants.

How to Read and Use these Scenarios

The scenarios are intended to be used as a platform from which we can imagine whether and how fishery management and governance might need to change in future. Below, we pose four categories of questions to consider while reviewing the scenarios.

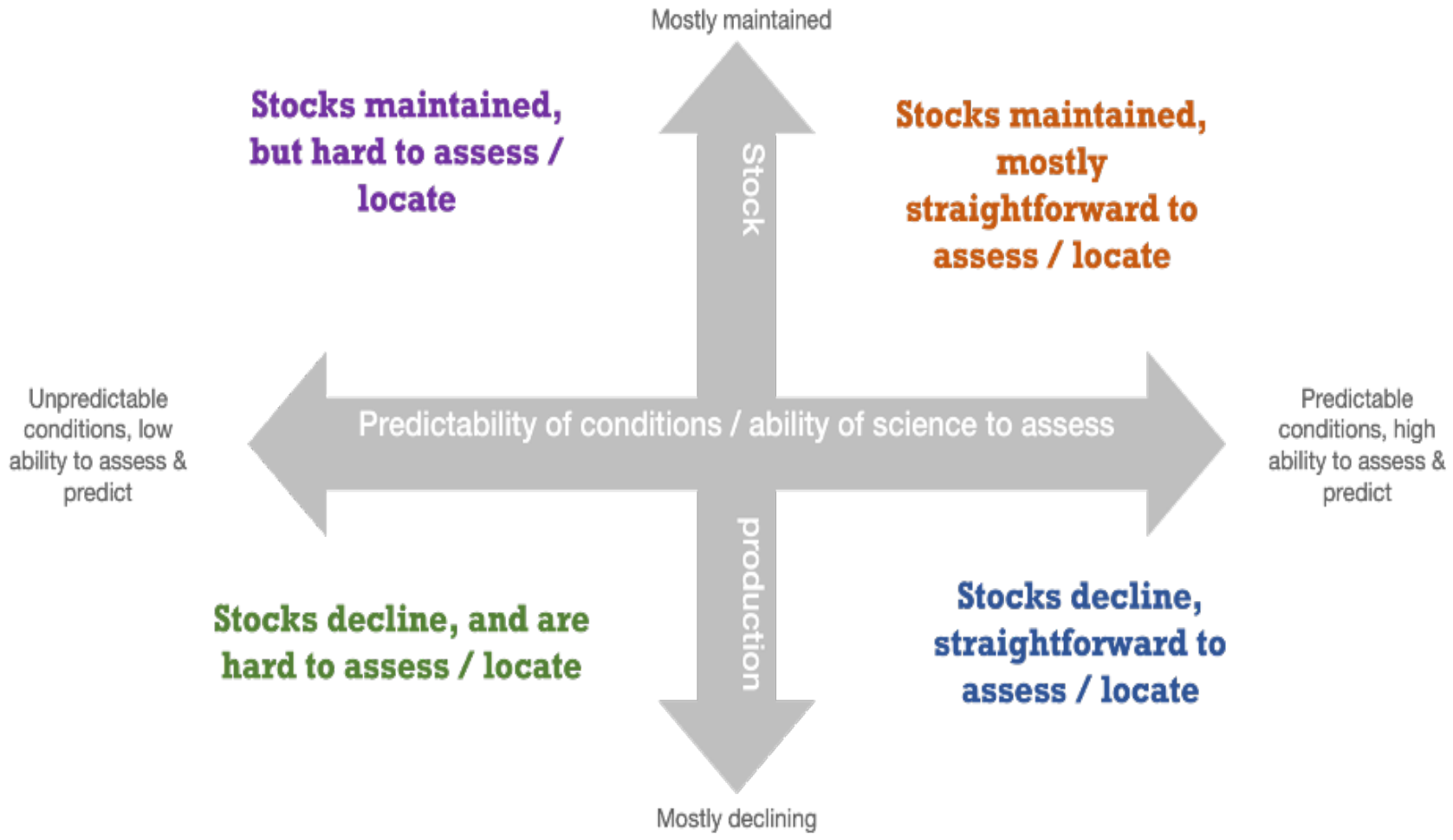
1) Management and Industry Adaptability / Flexibility / Nimbleness
   a) What does successful adaptability/nimbleness look like in this scenario for managers? For industry?
   b) What are the main barriers to effective adaptability in this scenario?
   c) If you knew this scenario was going to play out, what actions would you propose now, so that operators, communities and managers could adapt to cope with conditions in this scenario?

2) Data & Science
   a) What are the biggest data & science challenges facing fishery managers in this scenario?
   b) What new data & science opportunities emerge in this scenario?
   c) If you know this scenario was the future, what actions should fishery managers take now to ensure that data & science contribute to fisheries' success (data collection, coordination of existing streams, data usage, data sharing)?

3) Alternative Ocean Uses
   a) What are the most significant challenges for fishery managers posed by new ocean uses (aquaculture, offshore wind, shipping, tourism) in this scenario?
   b) What opportunities are presented by new ocean uses in this scenario?
   c) If you knew this scenario was going to play out, what would you do now to ensure that alternative ocean uses resulted in a positive or minimal impact on fisheries?

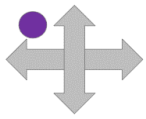
4) Cross-Jurisdictional Management & Governance
   a) What major stresses would be placed on existing cross-jurisdictional (Council/Commission/State) governance arrangements in this scenario?
   b) Would current approaches for updating management authority over a fishery work well? Here, management authority refers to the entity (Council(s), Commission, or NOAA) responsible for developing the management plan.
   c) What mechanisms for changing management authority need to be considered? For example, automatic triggers based on changes in stock distribution?
   d) What management challenges are present for species that move across jurisdictional boundaries?
   e) What actions/changes are needed to better manage species that move across jurisdictional boundaries?

Final Scenario Framework



Main Themes of Each Scenario

OCEAN PIONEERS "Weird weather and crazy conditions." That's what fishing operators and fishery managers are facing in 2040. Life on the ocean is remarkably different compared to 20 years ago. Climate change has prompted more investment in alternative energy and aquaculture. Seasons and locations of fisheries change unpredictably, and traditional science is unable to make accurate assessments. Despite this, fishermen report they are encountering plenty of seemingly healthy stocks. Ocean pioneers thrive in these turbulent conditions. Success doesn't come easy - it requires taking risks (such as investments in new data-gathering technology), deep pockets and an ability to ride out the storms of uncertainty. There are shifts in social and cultural connections and those who are able to work together and adapt can often improve their economic outcomes.	**CHECKS AND BALANCE** Good science, smart collaboration and tolerable conditions allow East Coast fisheries to cope with the challenge of climate change in 2040. But nothing is easy: stocks shift and expand their ranges, while busier coasts and new offshore activity create accessibility challenges for both commercial and recreational fishermen. Investments in habitat protection and restoration begin to reverse decades of damage and loss. Science capacity is boosted, delivering improved ocean monitoring, real-time catch reporting and population monitoring. A prosperous ocean economy leads to competition (e.g., between fisheries and aquaculture) but also collaboration (e.g., as fisheries science is boosted by data-gathering sensors on wind energy installations). Changing management approaches help usher in more extensive opportunities and economic benefits for fisheries.
COMPOUND STRESS FRACTURES Several sources of stress have led East Coast fisheries to breaking point by 2040. Shifts in ocean currents and extreme weather events have tipped ecosystems out of balance. Major storms lead to more pollution and degraded habitats. Healthy stocks are scarce. Low abundance leads to reduced harvests and protected species regulations close several fishing grounds. Science is unable to help, as stock assessment data cannot cope with such a changeable and volatile ecosystem. Even fishermen's local ecological knowledge is unreliable or irrelevant. Trust between stakeholders is in short supply, illustrated by fractious debates over the siting of offshore wind installations. Operators are forced to shift to lower trophic level species, and government support is needed to save a few selected fisheries.	**SWEET & SOUR SEAFOOD** "The science is good, but the news is bad." In 2040, climate change is affecting ocean and stock conditions in ways long predicted by scientists. Stocks have shifted their range while productivity and abundance have declined for most relevant species. Better forecasting techniques help fishermen prepare for marine heatwaves and localized die-offs. Aquaculture provides a much-needed alternative as wild-caught seafood declines, and better science ensures that any pollution dangers are minimized. There are signs of a few smart management decisions (such as limits on newly arriving species) and adaptation from fishing operators, but most management approaches have not adapted to the tougher conditions of today, and those on the horizon.



Scenario Narratives

Ocean Pioneers

"Weird weather and crazy conditions." That's what fishing operators and fishery managers are facing in 2040. Life on the ocean is remarkably different compared to 20 years ago. Climate change has prompted more investment in alternative energy and aquaculture. Seasons and locations of fisheries change unpredictably, and traditional science is unable to make accurate assessments. Despite this, fishermen report they are encountering plenty of seemingly healthy stocks. Ocean pioneers thrive in these turbulent conditions. Success doesn't come easy - it requires taking risks (such as investments in new data-gathering technology), deep pockets and an ability to ride out the storms of uncertainty. There are shifts in social and cultural connections and those who are able to work together and adapt can often improve their economic outcomes.

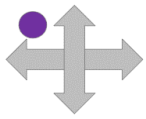
Ocean Conditions and Stock Productivity

In this scenario, ocean waters continue to warm, but rates of warming vary across regions. Environmental conditions and climate drivers are largely unpredictable, complex, and full of shocks and wild card events. Weather patterns and events become increasingly abnormal and harder to predict, including storms, heatwaves, localized warming, and severe weather events. Environmental change is not consistent, and there are spatial and temporal differences in the direction of climate drivers. Seasonal patterns and timing are changing, but with limited interannual predictability. Annual variability in currents and the cold pool contributes to the unpredictability of conditions.

Primary production is high due to increased upwelling and storms. Habitat generally remains of sufficient quality and quantity to support productive stocks. For some stocks, habitat is enhanced by the addition of more structure from wind farms on the continental shelf. Overall, fish stocks are doing well and the food web structure remains robust. Many species distributions have shifted, but species leaving an area are largely replaced by new species of similar economic value moving in. Most areas along the coast see changing and sometimes fluctuating species composition, but fishermen report that they are still encountering seemingly healthy stocks.

Science and Stock Assessments

The volatility in environmental conditions increases seasonal variability which makes it difficult to assess and forecast the health of specific marine resources in the current manner as stock availability and distributions are impacted. While overall productivity remains high, individual stock productivity is variable, with many species experiencing boom and bust years and frequent pendulum swings. Increased alternative energy and other ocean uses contribute to difficulties with stock assessments, as associated structures restrict traditional trawl survey areas. Seasonal management regulations



become more difficult to set and less successful as it becomes harder to predict where fish will be at a given time of year.

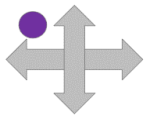
Mismatches arise between how data is collected and where the fish are, both spatially and temporally. Assessments have a difficult time keeping up, and eventually it becomes difficult to assume that stock assessments are robust. It is also difficult to determine "sustainable" biomass and fishing levels given changing distributions and fluctuating productivity of species. Because there is little baseline information about how stocks may fare under new ranges and conditions, it is often unclear what targets are appropriate. Managers suspect that for some species, changes in productivity and stock size are not being captured adequately by traditional assessments; in other cases, assessments indicate large fluctuations in biomass that may not be occurring in reality. Overall productivity seems to be high yet the concerns about the accuracy of assessments leads some to consider if scientific uncertainty buffers should be reevaluated. A new paradigm for determining sustainable fishing parameters emerges, with many 'historic' stock assessments being replaced with more 'pragmatic' methods for setting catch limits. It is also difficult for scientists to predict species range changes, as it seems to vary by species and region, and there are few consistent trends across years.

In general, scientists and managers struggle to keep up with changing conditions and increasing management needs. In many situations the traditional scientific process is too slow to provide advice on management-relevant time scales. Technology helps address some issues arising under this scenario, but isn't able to solve all problems. Increased use of transparent technology such as electronic monitoring and transmission of real time fishing data are able to give managers more information when traditional scientific methods and surveys struggle to keep up. While fishing industry and citizen science data are seen as increasingly critical, managers are still grappling with the best ways to use it, and tackling complicated questions around ownership of data. New data streams can also change conclusions about stock health, compounding uncertain and fluctuating estimates of biomass.

Fishing Practices and Pressures

Local ecological knowledge and innovative technological expertise is at a premium as fishermen adapt. Their data provides critical on-the-water observations and catch information. Management begins to rely more on the data and information collected and transmitted from fishermen on the water, as well as shoreside data collection at docks. Industry participants continue to push for this data to be used to its full potential.

Variations and unpredictability in environmental conditions and fish distributions lead to variable fishing success from year to year, creating "boom" and "bust" years for commercial and recreational fishing communities. In addition, sometimes harvesters must work around dangerous fishing conditions created by unexpected and extreme



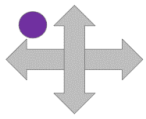
weather events. In the commercial sector, this creates market swings that cause frustration in the industry - it is hard to create stable seafood markets under these conditions. However, this is partially offset by increased public demand and willingness to pay a premium for sustainable seafood. Some smaller niche businesses succeed in adapting to fluctuating markets and new supply chain dynamics, but that requires courage, risk-taking, and a good amount of luck. The fishing industry faces a constant struggle to bring in new players given so much variability and uncertainty about future income potential. The next generation generally pulls back on investing in fishing industry businesses, aside from a few players who try to take advantage of new opportunities in a markedly different fisheries world.

Recreational for-hire businesses suffer in many areas as demand for trips drops: it is difficult to keep clients coming back with inconsistent catch and less familiar target species as local availability changes. However, a few recreational for-hire communities positioned in an area with an influx of popular for-hire target species are doing well. Private anglers are more adaptable as information about locally abundant fish populations travels through the angling community quickly enough to provide quality fishing opportunities for anglers with access to private boats or productive shore fishing sites.

Winners and Losers

Patterns of who is catching what have changed quickly. Inequity issues are prominent as differences in adaptability, largely driven by access to capital, have become clearer. For both commercial and recreational fisheries, those with access to more capital are able to ride out difficult times and take advantage of good stock conditions. Many others - often with fewer resources - struggle to cope with such uncertainty. There is a trend toward consolidation in the industry.

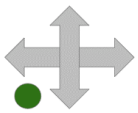
Winners are those who participate in highly mobile fleets as well as those who are able to invest in fleet and gear technology to adjust to fishing in deeper waters and/or to traveling further distances. But the longer travel times come at a cost for fishermen and their families, especially those with children. Investing in more fuel-efficient vessels contributes to success, given fluctuations in the cost of fuel. But such new technology is more expensive, even if over time it pays for itself. More complex business models adapt better to a different species composition, changing environmental conditions and weather patterns, and market conditions. Operators that are less able to diversify their target species and/or less able to travel to find fish are struggling. Those who cannot fish further offshore or by traveling longer distances along the coast find their local ecological knowledge, gathered in some cases over multiple generations, has become less useful as the ocean and the stocks change. For some gear types, smaller, more nimble vessels are at an advantage.



Extreme weather also creates winners and losers at the shoreside community level. Depending on local resources and wealth, some communities struggle to reinvest after major storms, while others use these events as an opportunity to invest in improved infrastructure. Ports that have already invested early in the protection of the coastline, driven by sea level rise and previous storms, are benefitting. Regional factors also influence vulnerability to sea level rise and extreme weather events. For example, ports in Virginia are subsiding which accelerates sea level rise impacts while the rocky shoreline of Maine is rebounding and less vulnerable to erosion from storms. On the other hand, coastal areas off of the Chesapeake Bay, Delaware Bay, and Hudson Bay are more vulnerable to water quality changes due to freshwater and storm runoff. Meanwhile, smaller fishing communities, especially those that had become dependent on a small range of climate-at-risk species, are having trouble adapting. Some suffer a loss of cultural identity, social bonds, and sense of place. However, some of these communities find ways to work together to adapt and thus strengthen their social and cultural connections.

Alternative Ocean Uses

While stocks are overall productive, many players have lost access to historically important fishing grounds due to space competition with new ocean uses, compounding industry struggles to maintain consistent access to shifting stocks and making it difficult to use accumulated local ecological knowledge. Extensive offshore wind and other ocean energy uses are changing access to traditional fishing grounds, so many fleets have shifted effort to less productive fishing grounds or expanded into previously un-fished areas. Shifts in the location of fishing effort combined with shifts in the range of marine species leads to changes in patterns of interactions with protected resources, which are now more difficult to predict. In some cases, increased interactions with whales and other protected species place further constraints on where fishing can occur. In addition, reduced available fishing area leads to increased user conflicts, between and among different gear types and between the fishing industry and adjacent uses. These changes have excluded participants who were unable or unwilling to modify their fishing practices.



Compound Stress Fractures

Several sources of stress have led East Coast fisheries to breaking point by 2040. Shifts in ocean currents and extreme weather events have tipped ecosystems out of balance. Major storms lead to more pollution and degraded habitats. Healthy stocks are scarce. Low abundance leads to reduced harvests and protected species regulations close several fishing grounds. Science is unable to help, as stock assessment data cannot cope with such a changeable and volatile ecosystem. Even fishermen's local ecological knowledge is unreliable or irrelevant. Trust between stakeholders is in short supply, illustrated by fractious debates over the siting of offshore wind installations. Operators are forced to shift to lower trophic level species, and government support is needed to save a few selected fisheries.

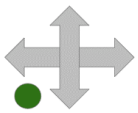
Ocean Conditions and Stock Productivity

This is a world in which ocean temperatures are increasing, sea levels are rising, currents are unpredictable, and marine heatwaves have increased in frequency and duration. There is a climate tipping point where the Atlantic Meridional Overturning Current, AMOC, becomes unstable. Severe storms have increased in frequency, which creates brown water and temporary dead zones nearshore, which in turn disrupts spawning events. Despite targeted restoration efforts, coverage of submerged aquatic vegetation, a climate-vulnerable coastal habitat upon which many species depend, is reduced. Temperature and pH changes vary, with some areas warming and/or acidifying more rapidly than others. Unpredictability is a hallmark.

Under these conditions, fisheries production and habitat quality has declined. Species distributions are shifting, and for some regions, there is little replacement of important commercial and recreational species that have moved into other areas or declined in abundance. Generally, species diversity has declined, while range expansion and contraction are extremely variable. Overall, the fish community looks quite different from today. Undesirable or low dollar value species that have traditionally been discarded (e.g., sculpins and searobins) are common. Abundance of lower trophic level species increases as top predators decline. Generalist species that occupy a range of habitats and do not rely on particular prey are more successful.

Many fishermen need to change stocks and/or traditional fishing grounds and find their decades-long or even intergenerational local ecological knowledge is unreliable or irrelevant. Even for those traditional species that remain, fishermen switching to a traditional species they had not previously fished need to learn new local ecological knowledge. Fishermen already fishing those species do not easily share knowledge and the newcomers' catches (and income) suffer during that learning period.

Estuaries, which are important fish nursery grounds, are experiencing declines in productivity due to habitat degradation. This is caused by several factors, including sea level rise and changes in salinity due to alterations of freshwater outflows. There is less



larval dispersal and increased larval mortality. Saltmarsh areas are reduced due to droughts, and coastal population growth leads to increased demands for coastal armoring to protect infrastructure, which prevents natural landward migration of these habitats. Coral habitats, which support some southeastern species, decline in quality.

Changes in the distribution and abundance of plankton lead to shifts in where large whales occur. Efforts to conserve listed fish species, such as Atlantic sturgeon and Atlantic salmon, continue, but populations remain depleted.

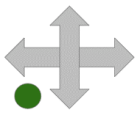
Science and Stock Assessments

Science is not able to predict the changes occurring in this complex and unpredictable ocean - and partly as a result, funding does not keep pace with ever-increasing demands. Stock assessment and status determination suffer. For most stocks, data streams and assessments lag behind current conditions, and are not useful for predicting dynamics. Scientists' assessments often clash with the experience of fishermen, leading to a lack of trust in the data. New fisheries emerge, targeting species lower on the food web, but a lack of knowledge of these stocks often leads to overexploitation. In some cases there is limited ability to obtain permits to target locally available and abundant species. Many stocks experiencing range shifts are incorrectly classified as overfished, and these false flags undermine trust in the management process. Over time, there is less funding for science and fishery management in general.

In a few fisheries, scientists and managers eventually learn to use novel, real-time data streams from some stocks to conduct more frequent management track assessments. Through advances in electronic monitoring (EM) some fleets have adopted 100% monitoring coverage. These fleets are able to provide more real-time data to managers and scientists, allowing for more nimble management of stocks, both in-season and annually. While many fishery management plans and regulations remain inflexible and are slow to change, those with enhanced monitoring have started to develop new approaches to better suit the needs of the changing fisheries.

Social and Economic Conditions

The costs of harvesting fish continue to rise and profit margins shrink. Fuel prices are volatile, and costs for other items such as ice, fishing gear, and other provisions increase regularly. Vessels are more transient, chasing fish northward and offshore, which increases transit times from home ports. This places stress on crew members and their families and leads to higher fuel consumption. Commercial harvesters find it difficult to retain and recruit crew. Current crew are aging and retiring fishermen are not replaced - fishing is not an attractive industry for most, especially young people. Some young people from fishing families still want to enter the industry, and manage to leverage family vessels and social capital to stay in the industry. But overall, the employment picture is grim. Processors are also having trouble retaining workers, given that cutters



often specialize in certain species and the species landed are changing, often unpredictably.

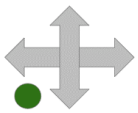
There are other stresses facing fishing operators. Precautionary management of protected species (including large whales) constrains fixed gear fisheries. Discards of diseased fish are problematic. Significant atrophy occurs within some fleets. Damage from more frequent and extreme weather events has a compounding negative impact on some coastal communities, including fishing ports. As it becomes harder to succeed within existing fishery laws and regulations, trust and open communication between the fishing and management communities erodes.

More people move to the coast to gain relief from higher inland temperatures, exacerbating pre-existing gentrification problems. This causes ever-growing development-related stresses on nearshore habitats. Climate impacts on agriculture lead to rises in food prices, and ultimately, this leads to higher demand for seafood protein. While this provides opportunities for fisheries, consumers are primarily concerned with price and taste and are willing to buy imported or tissue cultured products so long as they are inexpensive and enjoyable to eat. There is limited broadscale emphasis on locally caught seafood, though some consumer-supported fisheries and other direct marketing businesses retain sufficient customer base to stay afloat or even prosper. Further complicating matters, there are international tensions which also affect seafood trade. Faced with such multiple and mounting pressures, the industry experiences significant consolidation, with marginal players often forced to sell up and move out. This has a damaging effect on fishing communities, with traditional activity shrinking or disappearing. Cultural identity, sense of place, and social bonds deteriorate in some fishing communities, especially those with significant influxes of population from further inland.

Recreational fishing by boat becomes very expensive and is usually only available to the wealthy. Some of the more sought-after species move further offshore and occur at lower densities, making them harder to target. As a result, new community groups form to lobby for government support to maintain access for lower-income recreational fishermen. The profile of shoreside angling changes in many areas of the Southeast, where reductions in fish habitat and water quality render coastal waters unsuitable for species that were previously common there. This has ripple effects for bait and tackle shops and other recreational fishing infrastructure. It especially impacts those fishing for food, as the lower value species they had traditionally depended on are less common or being landed by more purely recreational fishermen in place of their traditional recreational species that are not as available.

Alternative Ocean Uses

As fishing activity declines due to uncertainty and stock changes, fishing is no longer the dominant activity in the ocean. Offshore energy and shipping now take up more



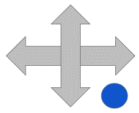
space and, despite good intentions, these industries don't need to rely on a healthy ocean ecosystem. Wind installations and shipping create damaging effects on nearshore and offshore fish and fisheries.

More funding is directed to these new ocean uses, with managers and scientists focusing their attention towards these new opportunities sometimes at the expense of researching changes in fisheries. Atrophy in the fishing industry allows ports to expand and change to accommodate offshore wind and shipping, but this does little to support fishing operations. Smaller fishing ports are lost without targeted interventions. Such interventions are successful where the right mix of resources come together, and a few ports experience a renaissance, where hub ports with diverse fishery support services remain accessible and the number of fishing vessels increases for the first time in decades. But many other fishing communities lose local waterfront space, leading fishing families to struggle to remain in fishing. In some cases, fishing families are pushed even further inland than they had been by previous gentrification issues. Fishing families from a single community end up scattered across several communities, losing their sense of place and sometimes their cultural identity as fishing families. This leads to social disruption as former fishermen struggle to find other work that is as fulfilling as fishing.

Responses to Difficult Conditions

As a short-term response to these extreme harvesting and marketing stresses, the Federal government acknowledges fisheries disasters and increases support for selected domestic fisheries. It supports the development of domestic markets for fish and reduces imports through tariffs. This includes market development, advertising, science, technology, and workforce training. Workforce training is especially valuable when it builds on and expands existing programs with proven track records. Given limited resources, specific fisheries are targeted for these interventions because they likely have staying power under new environmental conditions. In fisheries that receive these interventions, there are successes around reduced operational costs, new markets, and innovative science programs. Some fisheries and fleets do not survive the cataclysm. Some fishing communities lose vessels that depended on those fisheries and fleets, and eventually fishing infrastructure and population. This frays the social bonds, cultural identity and sense of place in those towns.

Despite these fractures, there are some bright spots on the horizon for the industry. Battery technology improves to allow some vessels to switch to more efficient electric vessels and improvements in radar systems allow for safer navigation. Offshore aquaculture expands to both supplement and enhance wild capture fisheries. Because both wild capture fisheries and aquaculture require processing infrastructure, aquaculture-related enhancements benefit wild capture fisheries as well. Shellfish aquaculture mitigates coastal water quality concerns in some specific areas, improving habitat for many species.



Sweet and Sour

"The science is good, but the news is bad." In 2040, climate change is affecting ocean and stock conditions in ways long predicted by scientists. Stocks have shifted their range while productivity and abundance have declined for most relevant species. Better forecasting techniques help fishermen prepare for marine heatwaves and localized die-offs. Aquaculture provides a much-needed alternative as wild-caught seafood declines, and better science ensures that any pollution dangers are minimized. There are signs of a few smart management decisions (such as limits on newly arriving species) and adaptation from fishing operators, but most management approaches have not adapted to the tougher conditions of today, and those on the horizon.

Ocean Conditions and Stock Productivity

The earth and oceans continue to warm, particularly in the Gulf of Maine, where the average temperature has risen by ~1.5 degrees since 2022. The Gulf Stream has continued to become more prominent, bringing warmer water along the east coast, and edging out the cooler waters from the north. The cold pool historically present off of the mid-Atlantic is now a rare occurrence. New primary production varies with latitude, but generally, across all areas, we are seeing larger plankton being replaced by smaller species, resulting in lower fish productivity.

There is an increase in stronger and more frequent storms that impact coastal communities most acutely. While predictive capabilities for these storms are good, impacts to fish habitat and infrastructure are high due to the lack of time between storms to repair and restore. Along with storms, increased pollution plus continued warming have impacted habitat type and function, resulting in decreased abundance and a comprehensive shift in available fish stocks in each region. Some towns are faring well, despite these changes, because of the efforts made to develop living shorelines, while providing incentives to private marina owners for ensuring a proportion of the marina is available for commercial and for-hire vessel access.

Despite similar climatic influences, the biological impacts vary between regions due in a large part to local adaptation efforts. Stock distributions have continued to shift, sizes of individual fish are smaller, and productivity of most stocks has decreased. Continued degradation of estuaries and other habitats has contributed to impacts to spawning areas and decreased recruitment.

Science and Stock Assessments

In this scenario, scientific understanding of the oceanographic and biological conditions is very strong, even if the news is not good. Researchers are able to closely track changes in water temperature and stock distribution using a variety of methodologies. These include enhancements to the Federal trawl survey, cooperative research with the fishing, offshore energy, and aquaculture industries, and new

techniques to better model and predict future changes. Marine heat waves continue to be important, but scientists are able to predict them in enough time for fishermen to prepare. Scientists track changes in the environment and share them with management using robust indicators within ecosystem status reports. Their findings indicate declining stocks and worsening habitat, but at least the accuracy of the information provides opportunities for managers to address such problems. Generally, effective management is able to keep pace with new information and identify how to use it to inform timely decisions. But some management is constrained by slow decision-making processes and incongruent approaches along the East Coast.

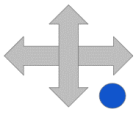
Management Responses

Unregulated access to species in new areas before the broader management program can respond is problematic. This leads to distrust across fishing communities, as groups who have the permits are unable to benefit from expanded stock availability due to complex regulations. However, proactive efforts by one of the region's fishing industry groups resulted in healthy and productive fisheries despite these changes. For example, their actions to limit fishing on the few newly arriving species allowed the establishment of reproducing populations that have generally replaced the cod, Atlantic mackerel, and lobster that have moved north into Canada. However, no trans-boundary agreements were forged to allow New England fishermen to follow the stocks into Canada; this, in addition to a continued market focus on these historical species, led to increased imports of these species rather than focusing on new species in the area. For example, tourists still insist on lobster rolls along the coast of Maine, rather than adjusting to eating the black sea bass that local fishermen are harvesting now.

Adapting to New Conditions

Aquaculture has seen significant growth in the area, driven by demand for protein as the abundance of wild caught seafood declines. Advances in science and technology have led to less pollution from net pens and less reliance on wild caught fish for aquaculture feed. Streamlining of the regulatory process has allowed for aquaculture businesses, including offshore finfish farms and sea ranching, to expand, yet their small ocean footprint does not impact wild fishing to the same extent as other alternative ocean uses.

Fish stock distributions have changed what is available for day-boat fishermen, but their ability to catch those species has stalled the shifts, with a few exceptions. Some fishermen have been able to adjust to fishing for different species, despite the expense associated with acquiring the gear necessary to make those changes. For example, one group has been able to capitalize on turning previously low value, bycatch species into animal feed and fertilizer. Importantly, a shift toward "boutique fisheries" allowed some small-scale fishermen to adapt to the reduced catch limits and new stocks yet still remain economically viable. This occurred because an Alternative Ocean Use area reopened to commercial and for-hire hook and line fishing, primarily targeting highly migratory

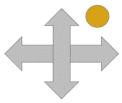


species such as Atlantic cobia. The previous closure of this area had allowed for this previously southern stock to establish a strong sub-population without exploitation. The management body added this species to an existing FMP, with provisions limiting access to previously permitted small vessels only.

Unfortunately, similar efforts were not implemented throughout the region, leading to varying levels of protection for newly arriving stocks, and limited establishment of new populations. This has been especially problematic as the loss of forage fish biomass has impacted all levels of the food web in these areas. Continuation of historical fishing methods and sales, along with poor articulation of priorities or values, has led to the loss of many small-scale fishermen in some areas because they are being replaced by large corporations able to focus on quantity over quality. In such areas, changes in the management process have been far behind the timetable necessary to allow smarter and more cost-efficient permitting changes. This has resulted in an industrialization of the fleet, edging out owner operators with less capital. The variable management response between regions has also led to increased conflict between regions and sectors. Fishermen have also struggled to establish solid marketing of locally sourced fish because consumers are still able to access the historically popular stocks through imports.

Access to fishing areas and stocks by commercial and recreational fishermen is not just impacted by the availability of permits and gear. Privatization of marinas, docks, and other ocean access sites has made it difficult for low and average income commercial and recreational fishermen to take advantage of new opportunities. These access restrictions have also led to substantial and disproportionate impacts on subsistence (food/cultural heritage) fishing, greatly limiting the ability of poorer communities to supplement food sources and of some groups from acquiring specialty species for religious/cultural practices.

As the ocean gets busier, commercial and recreational fishing participation is limited by the physical space available to fish in. New offshore energy and aquaculture structures have narrowed the fishable areas in ways that are not aligned with shifting habitat preferences of target species. Some participants in recreational fisheries have enjoyed an increased access to previously unavailable stocks closer to home, but most struggle to afford the ability to fish in deeper, colder waters. Many recreational fishermen have also been impacted by the loss or diminishing of longtime or even generational family traditions associated with annual or seasonal trips to the shore.



Checks & Balance

Good science, smart collaboration and tolerable conditions allow East Coast fisheries to cope with the challenge of climate change in 2040. But nothing is easy: stocks shift and expand their ranges, while busier coasts and new offshore activity create accessibility challenges for both commercial and recreational fishermen. Investments in habitat protection and restoration begin to reverse decades of damage and loss. Science capacity is boosted, delivering improved ocean monitoring, real-time catch reporting and population monitoring. A prosperous ocean economy leads to competition (e.g., between fisheries and aquaculture) but also collaboration (e.g., as fisheries science is boosted by data-gathering sensors on wind energy installations). Changing management approaches help usher in more extensive opportunities and economic benefits for fisheries.

Ocean Conditions and Stock Productivity

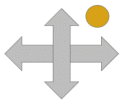
This is a world where societal and policy choices are firmly focused on emissions reduction. This has not yet had noticeable impacts on ocean conditions (temperatures continue to warm and sea levels rise), but more investment and attention is now placed on addressing climate change and environmental concerns. This has resulted in increased funding for science and innovations in data that have improved the ability to predict and assess the impacts of climate change.

Ocean temperatures have increased, leading to extensive shifting stocks and range expansions. Science has been able to accurately predict the changing location of abundant stocks, which is critical to the ability of commercial and recreational fishermen to plan for adaptation.

Public and private investments in estuarine conservation, restoration, and enhancement have created a more robust, foundational support for the ecosystem, food web, and forage and estuarine-dependent managed species. Habitats have improved, enhancing the production of many stocks. Storms are more frequent and intense, but science is able to better forecast and understand the impact of such events, increasing safety in what has historically been one of the highest risk occupations in the U.S.

Fishing Practices and Pressures

Despite advancements in science, commercial fisheries still struggle to thrive, faced with high operational costs and a decrease in product prices. Fishermen travel long distances for their catch, increasing their fuel costs and placing increasing burdens on fishermen and fishing families due to longer absences from home. Meanwhile, some fishermen have further diversified their employment across the seasons, with some adding aquaculture to their seasonal rotations and others periodically driving boats servicing offshore wind platforms. Some fishery participants have adapted well to changing conditions by reconfiguring their vessels, moving to the new locations of their traditional species, utilizing new technologies to find fish more effectively and/or using



less fuel and other resources. But this is a significant amount of work at a time when fishermen are already spread thin trying to keep track of changing oceans, changing ocean infrastructure, and changing management.

Despite a broad abundance of stocks, some commercial fishery participants have decided that the fishing activity is not worth the effort. Many of these fishermen have sold their interest in fishing to corporations and are no longer involved in the industry or have gone to work as captains or crew for corporate fleets where their income is more secure and they no longer have the sole responsibility of responding to the changing fishery conditions. The result has been a general loss of small-scale commercial operators and an increase in corporate interests and aquaculture. Corporations have had better flexibility to sustain larger operations over a wider geographic area.

The recreational sector is strong thanks to abundant production and relatively predictable ocean conditions. Wealth has increased along the coastlines, encouraging expansion of recreational fishing. However, the accessibility to recreational fishing has diminished as the effects of sea level rise, coastal development and gentrification have reduced public access to the ocean via piers, docks, and beaches. Many recreational fishermen must have the income to either fish on for-hire vessels or travel offshore on personal vessels. Those unable to do this are losing access to fish for food, cultural practices, and/or fishing as a family tradition. The for-hire sector adapts to new species and continues to expand, creating an increase in overall recreational fishing. Fishermen in the Southeast have transitioned to different species such as harvesting yellowtail snapper off the reefs of Georgia or conch in North Florida. In the Northeast, recreational trips target black sea bass and spotted sea trout.

As society becomes more concerned with climate change impacts, science is well funded, and its efficiency has improved. Effective ocean monitoring, real time fisheries reporting, and food web and population monitoring are all regular sources of information for fishery participants. Smarter surveys are able to identify changes in species compositions, the habitats both new and traditional species are utilizing, and oceanographic characteristics, all of which lead to a better understanding of the changes in the food web. With proactive and increasingly effective science, species productivity is better assessed, distribution shifts and range expansions are forecast and tracked, and interactions with protected species and bycatch fall to historically low levels. Interactions with protected species and bycatch are further reduced by advances in gear technology developed in both corporate and cooperative research fleets.

As science improved, stock production increased and management evolved. Fishing operators and communities have started to successfully adapt to a range of changing conditions. New markets have been developed, helping to sustain more commercial fisheries and increased recreational opportunities. White and brown shrimp now compete with Maryland crab cakes in popularity and the grouper sandwich has now

become a tourist draw in New Jersey. But the successful evolution of commercial and recreational fisheries was only possible because of changes in management approaches. When effective, such changes provided for a full and flexible balanced use of available stocks, leading to a more diverse array of marketable species along the coast. Without changes to management, extensive opportunities and economic benefits for the commercial and recreational fisheries may not have been realized and there would have been greater impacts to fishing communities and fishing as a way of life.

Alternative Ocean Uses

East Coast waters are now being used for multiple purposes, including extensive wind energy areas and aquaculture. These competing uses have created significant tensions related to fishing rights, opportunities, working waterfronts, and equity. Zoning issues on land combined with impacts of sea level rise create user conflicts. For example, the expansion of wind power has led to a decrease of commercial spaces in working waterfronts, causing commercial fishermen to have issues finding dock space and local dealers. This also exacerbates an already ongoing consolidation of dockside services in hub ports rather than being scattered along the coast.

Gentrification continues to create concerns over accessibility for both recreational and commercial fishermen. Where commercial fishing access is lost, some fishing community members end up moving to other towns, losing their unique sense of place and some of their cultural identity. These communities then lose any remaining commercial fishing infrastructure. Local businesses such as ice vendors and grocery stores lose revenue. Where recreational fishing access is lost, local businesses such as bait & tackle shops have to close, as do some local restaurants and businesses catering to tourists. Some fishing communities, though, find ways to push back against gentrification through new town, county, or state laws that preserve their unique heritage.

More alternative energy activity has resulted in less political leverage for fishermen as energy users become more powerful. However, many fishery and coastal stakeholders have benefited from this new influx of attention and investment. Ocean research and monitoring activity is improved by using offshore wind platforms. Aquaculture and offshore wind drive more infrastructure spending in coastal towns. More generally, fisheries benefit from improved coordination with alternative energy operations, assisted by effective regulatory and management approaches. In addition, aquaculture has expanded and is included in the suite of marketable seafood products.

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Scenarios As Platforms for Thinking About Adaptability

The scenarios above represent four different futures influenced by varying levels of stock productivity/abundance and the level or predictability of ocean conditions. Within each of these four stories, the success of players in the system varied according to whether they (and the system in general) were adaptable to the new and different sets of conditions.

Different degrees of adaptability were in evidence in the scenarios. Sometimes, the stories explained how some regions were more adaptable than others. Sometimes players in the system learned over time, so adaptability was higher in later years compared to earlier. In other storylines, adaptability was determined by the level of capital investment, or sometimes by the willingness to use technology.

It seems clear that the secret to success (for most players) in an era of climate change is an ability to adapt to changing conditions. But what does adaptability mean? Across the scenarios, ideas about adaptability were discussed across several dimensions.

- Many of the scenario stories recognize that fishing operators are inherently adaptable, as they have reacted to changing conditions over many years. Stock availability has varied, fish have changed their ranges, economic challenges have emerged from unexpected sources (like the pandemic). But a future of climate change will put even more pressure on the ability of operators to adapt. The optimistic see no reason why operators won't continue to adapt. The pessimists see that climate change alters conditions so much that it could get more difficult to do so.

- Elements of the scenarios also reflect the fact that operators have only so much influence over their ability to adapt. They might be constrained by external factors, such as "too much change," a lack of resources, technology, or politics. They might also be constrained by more internal factors such as existing skills and conventional attitudes.

- The scenarios also raise questions about who adapts. In some situations, new players come into the market for ocean resources. Energy and aquaculture companies might innovate and become more powerful players, creating a highly adaptable environment that poses real challenges for fishing operators. This links back to the question of the resources and attitudes available for adaptation.

- During scenario creation conversations, fishing operators saw their ability to adapt being constrained by existing fishery management and governance approaches. In a future of climate change, where stocks might move, ranges might expand, and new challenges could emerge from year to year, it is imperative that governance and management recognize the need for their own

approaches to adapt. There is a major concern that current arrangements will limit success, given the need for operators to travel further, catch different stocks, etc., etc.

- Adaptability was also referenced in terms of the legal and regulatory apparatus (mostly the MSA, but also including other federal and state regulatory constraints). At this stage, the scenarios have been written in a way that assumes that the legal and regulatory apparatus remains broadly intact. However, this should not constrain the next stages of the process from generating ideas based on possible changes in the legal and regulatory environment.

To sum up, these scenarios describe ways in which various players and places might adapt (or fail to adapt) to a range of new and different conditions in an era of climate change. The descriptions outline some of the broad contours of possible changes - to fishing practices, use of technology, governance and management etc. -- but they stop short of suggesting specific actions. That is the purpose of the next stage in the overall process. These scenarios should be used merely as platforms, containing hints and provocations to help stakeholders discuss the actions to come.

1. Introduction

The East Coast Scenario Planning Initiative has engaged hundreds of stakeholders in conversations about how climate change might affect the future of fishery management on the East Coast. In recent months, participants have settled on a framework creating four scenarios, each describing a different future that fishery managers and others might face.

Based on the scenario matrix, the four stories were distinguished by two critical uncertainties. The horizontal uncertainty described the difference between a future of unpredictable conditions (where science struggled to provide adequate information) and a future of predictable conditions (where science proved adequate to inform fishery management and other decision-making). The vertical uncertainty described the difference between a future where stocks (in aggregate) were maintained or increasing, and a future where stocks were declining.

The Initiative is now in the Application phase, where we apply the scenarios to help (i) identify the consequences for future fishery governance and management and (ii) suggest recommendations for changes to existing approaches or arrangements.

This Application phase began with a series of three brainstorming sessions, bringing together a cross-section of representatives from participating management organizations. Participants were asked to consider the specific challenges and opportunities that each scenario poses for fishery managers, and then asked to generate ideas for possible changes and actions that are needed for fishery governance and management to be effective in the future. The purpose of these sessions was not to reach conclusions. Instead, it was to identify *preliminary* ideas that will help kick off scenario discussions at Council and Commission meetings in Fall 2022, and subsequently at a Summit Meeting in early 2023.

This report provides a summary of comments and reactions gathered when discussing each scenario. In the manager brainstorming sessions, we divided comments across four main thematic areas: (i) cross-jurisdictional governance and management, (ii) data and science, (iii) alternative ocean uses, and (iv) adaptability. The summary starts with a brief overview using the matrix structure. This is followed by more detailed ideas per scenario. The comments are then followed by some analysis of common themes and issues that appeared relevant across multiple scenarios. These recurring themes are important to capture, since they often represent the most important issues that need to be addressed as they are likely to emerge no matter which scenario occurs in the future.

2. Ideas and Reactions by Scenario

Below is an outline of preliminary challenges, opportunities and options for each scenario that were generated in the manager brainstorming sessions. The following pages contain more detail for each scenario.

Ocean Pioneers
A future of unpredictable conditions and maintained / increasing stocks

- Climate change creates governance 'turf wars', requiring organizations to compromise on jurisdictional control
- Without accurate information, decisions might be made on a more qualitative basis
- Current stock assessment process unlikely to work, and could prompt moves towards simpler harvest control rules
- Vessels and new ocean users offer opportunities for fish & environmental data collection

Checks and Balance
A future of relatively predictable conditions and maintained / increasing stocks

- Focus on access and participation from small fleets and low-income recreational fishermen
- Focus on joint management of stocks rather than switching from one management body to another
- More emphasis on new technology, biological sampling in ports
- Consider how new ocean users have a seat at the table

Compound Stress Fractures
A future of unpredictable conditions and declining stocks

- Consider managing spatially or by species, or both?
- Give specialized fishermen the opportunity to move up & down coast; allow fixed fishermen to move from one species to another
- Consider how to respond when previously reliable indices for managed species are no longer reliable
- Collaborate with other users for real-time monitoring

Sweet & Sour
A future of predictable conditions and declining stocks

- Informally work through solutions to determine best approaches before formalizing changes too quickly
- Deliberately make strategic choices around declining stocks
- Further develop climate-informed status reports like State of the Ecosystem / Vulnerability Assessments
- As aquaculture products increase in popularity, increase efforts to market wild-caught seafood

Ocean Pioneers

Cross-Jurisdictional Governance & Management

- Current governance structure will not work well in this scenario
- Climate change is creating a governance turf war, particularly between Councils
- Species or trophic level boards/teams may work better than regional management bodies
- Move away from state-by-state management
- Challenging to balance community level considerations against regional/national benefit
- Consider how to have more interaction and collaboration between management bodies
- Balance against challenge of too many participants leading to cumbersome and slow processes
- Governance model needed that can more easily adapt to fluctuating conditions
- Increased flexibility needed for permitting/landing: who can land the fish and where
- Need better/more creative ways to link emerging science with management strategies such as allocations
- States have less resources available to adapt and would rely on ASMFC process more
- If science can't keep up with stock shifts, how do we decide who should manage them?
- Organizations are going to have to prepare to compromise on jurisdictional control

Adaptability

- Need to address bureaucratic factors that slow down process; determine where efficiency can be gained
- Continued virtual meetings are a potential way to increase efficiency
- Need transparency and public input, but need to find a way to make that process more efficient
- Managers will need tools to make decisions with less information/certainty (e.g., more management strategy evaluation; simulation tested control rules)
- Managers may also need to make some decisions on more of a qualitative basis
- Simple management strategies may work better than complex plans
- Communication may need to adapt to manage public expectations
- Commercial fleet likely would shift to larger vessels and processing at sea

Data and Science

- Our current stock assessment process will not work given fluctuating and unpredictable conditions; much too slow and cumbersome
    - Assessment metrics may also need to change
    - Might need to move toward simpler Harvest Control Rules
- Increased data (on fish and environmental conditions) needed from fishing industry and other sources
- New data sources must be able to be incorporated into management process quickly
- Artificial intelligence could produce advice more rapidly
- Need better spatial recreational data; current surveys inadequate to detect shifts
- More recreational catch accounting in general will be needed
- Fishery independent surveys will need to change to better capture species shifts
- Science that does not align with perceptions/experiences on the water will pose challenges for managers
- If public sees that science is not well informing management process, will be difficult to sustain funding
- Current science structure is framed around current management structure: will need rethinking if governance system changes

New Ocean Uses

- Leverage new ocean uses as an opportunity for fish and environmental data collection
- Need for better spatial data to help with planning and evaluation of new ocean uses
- Consider deconflicting proactively through ocean zoning
- Recreational shore access needs to be actively maintained as other ocean uses increase activity on shore

Compound Stress Fractures

Cross-Jurisdictional Governance & Management

- Consider managing spatially, not by species, or a combination of the two
    - Both domestically and internationally
- Work with foreign entities to figure out how to bring fish back home
- Increase participation in committees and liaisons on other Councils
    - Allow these members to vote
- Be more inclusive of all states in management decisions
- Focus on accurate, clear communication to mitigate frustration

Adaptability

- Permit system could be adapted to allow fishing what is available instead of species-based
- Reduce timeframe for actions (many actions currently take 2+ years)
- Give states the ability to transfer quota based on who needs it year-by-year
- Reevaluate rebuilding guidance based on new environmental conditions
- Either give specialized (by species) fishermen the ability to move up and down the coast or allow fixed (by location) fishermen to move from one species to another
- Create a permit system that allows fishermen to easily change gear types
- Consider if triggers/pre-determined decision rules can streamline development of fishery management actions
- Consider reducing effort in fair and equitable ways

Data and Science

- Move towards real-time monitoring feeds instead of surveys
- Collaborate with wind and aquaculture on monitoring
- Shift focus to problematic areas
- Work towards continued availability of funding for surveys that represent long time series and/or are critical for stock assessments
- Understand species' habitat needs are, and what habitat bottlenecks might be as species distributions shift
- View as an opportunity to collaborate with fishing industry on data collection
- Ensure that science used for management is representative of conditions on the water
- Create flexibility to use new data sources for management
- Streamline QA/QC so that data can be used more rapidly following collection
- Determine how to respond when previously reliable indices for managed species are no longer reliable
- Recognize that we might need more/higher resolution data to understand a variable system
- Work towards climate-informed assessments, projections, and status determinations
- Enhance existing trawl surveys to ensure that they address data needs
- Take advantage of offshore structures for wind and aquaculture as data collection platforms

New Ocean Uses

- Collaborate with real-time monitoring and reporting and increase communication between users

Sweet & Sour

Cross-Jurisdictional Governance & Management

- Clarify responsibilities for aquaculture permitting, and Council/Commission role and interest
- Craft strategies/policies for when a management response is needed due to shifting stocks
    - Consider federal/state issues and whether the shift is expected to be lasting or ephemeral; goal to avoid whiplash
- Need to develop clear/formulaic criteria for jurisdictional changes (i.e., shifting management of a species from one body to another, or enacting joint governance)
- Consider current adaptation strategies that should be continued/expanded and perhaps formalized
- Opportunity should be provided to more informally work through solutions to determine best approach before formalizing changes (e.g., through NMFS policy guidance or written agreements) too quickly
- Governance decisions are extremely tough when managers must make choices that could affect their own jobs/organizations
- Formulaic allocation methods based on distribution don't always account for historical social and economic importance
- Prohibit imports that do not meet US conservation standards
- Move from single species to ecosystem-based management
- Develop scheme where decision making is done by businesses (commercial or charter)

Adaptability

- Deliberately make strategic choices with declining stocks: for example, fleet contraction/reduction, or restrict effort across all current participants
- Consider new/increased utilization of species not previously fished, or occurring on the high seas
- Explicitly acknowledge that behavioral change (e.g., shifting towards harvesting and processing new species) is challenging
- Consider how much we let market forces vs management affect adaptation
- May need more international agreements as fish shift across borders
- Cultivate a culture of being more proactive instead of reactive

Data and Science

- Enhance/augment existing trawl surveys to ensure that they address data needs
- Take advantage of offshore structures for wind and aquaculture as data collection platforms
- Prioritize allocation of time/funds towards data collection to support increased science needs
- Increase collaborative data collection
- Improve coordination around NOAA surveys in different regions; standardize methods and design
- Focus on data storage and access
- Ensure assessment models are robust to new realities/variability in system; or develop new approaches
- Allocate resources strategically between fishery independent and dependent data collection
- Continue to advance and improve climate informed status reports like State of the Ecosystem Reports and Vulnerability Assessments
- Assessment techniques should include climate informed recruitment information

New Ocean Uses

- Educate consumers on how to appreciate and prepare seafood
- Behavioral change of watermen from fishing to aquaculture is difficult
- Engage in robust and data-driven spatial planning to better evaluate where to locate ocean activities
- Plan for how to integrate wild capture fisheries and aquaculture. One idea here might be planning for when aquaculture operations wish to culture council or commission managed species, and whether a regulatory response is needed from the commission and councils)
- As availability of aquaculture products increases, put effort into developing markets for wild-caught seafood to ensure survival of industry

Checks & Balance

Cross-Jurisdictional Governance & Management

- Focus on and modify joint management approaches to make sure all are represented
- Focus more on access and participation from small boat fleets and middle/lower class recreational fishermen or they may be lost
- Coordinate and work on coastal resiliency to address environmental justice issues and provide access and ensure access remains available
    - Note: increased access comes at a price; may drive up costs of fish making seafood less accessible
- Need clarity and guidance on when changes in distribution should lead to jurisdictional shifts in management
- Need to be mindful of current limited access rights and permit qualifications when making governance changes - removing access/rights may be a conundrum
- Need to consider flexibility in fishery permitting and access at federal and state level and in combination

Adaptability

- Maintain and increase shoreside access for anglers
- Focus on joint management of stocks as opposed to switching from one management body to another (i.e., one Council would have primary administrative authority in cooperation with other Councils)
    - Note: this could slow things down
- To understand new fisheries, we need data to understand what is there now to understand when there is a shift in distribution
- Use data to make more real-time decisions

Data and Science

- More emphasis on new tech, biological sampling in ports
- Work towards more efficiency in existing surveys since we are already struggling to maintain them, and resources are already limited

New Ocean Uses

- Collaborate and share data with other ocean users
- Consider ways to work with the commercial space industry to accommodate rocket launches. (I.e., closures 4-5 hours before and 1-2 hours after)
- Consider whether other ocean users will need a seat at the fishery management table, as advisors or otherwise, to allow for better collaboration
- Establish clear and consistent communication across sectors

3. Common Issues Across Scenarios

The following issues emerged as particularly important across multiple scenarios. This provides an initial list of some of the problems that fishery managers are faced with, and will need to address as climate change has an increasing impact of ocean and shoreside conditions:

- Challenges of the current cross-jurisdictional structure: particularly in unpredictable scenarios, participants recognized the **limitations of the current regional structure** and felt that it would be unlikely to work in the future. But setting up a structure that accommodates moving stocks is tricky. Groups considered whether species / trophic level structures might offer a more suitable approach in uncertain conditions. Or is there a way of managing by location, rather than species?

- Groups also talked through the **mechanics of changing management responsibilities**. Should formal rules and criteria be established to indicate when a species requires an alternative management approach, or should such transitions be decided informally? It will be important to establish approaches that create consistency/continuity and avoid whiplash.

- Managers will need to make **decisions with less clarity and certainty**. Will this involve more simulations and MSEs? Or can decision-making be achieved by devising simpler management strategies as opposed to more complex plans? What needs to be done to manage public expectations about decision-making in situations of inadequate information?

- Fishery management is sure to involve more **collaboration**. This might be across management bodies, international partners, or with new ocean users. How can we ensure more regular (and intensive) collaboration without it leading to cumbersome and time-consuming processes? Or can we envisage new processes that can accommodate new voices? And what is the purpose of collaboration? Is it to ensure that all are consulted as decisions are made? Or should fishery managers see more collaboration as a way of learning and innovating (e.g., new data sources, biological sampling, supplementing changes in fisheries production)?

- What's the suitable balance of **funding and attention in data and science**? Is it more important to maintain, or even expand, sample sizes and improve the efficiency of existing surveys (e.g., trawl surveys)? Or should more attention be placed on establishing new sources of data (e.g., real-time from vessels, collaboration with wind energy installations)? Should we consider how fishery surveys could gather additional environmental data?

- Our current **stock assessment processes and methods** may not work well in a world where more timely information is needed to ensure a management process that is nimble and responsive. Can we find ways to speed up stock assessment development

and review processes? Are there assessment methods or other metrics that might allow for more real-time resource evaluation? How do we balance the desire to incorporate more data, ecosystem information, and climate information with the need to streamline the assessment process?

- There were recurring needs identified for **increased flexibility around permitting and landing**. Could there be movement towards a system of permitting fishing for what's available, rather than for particular species? Can specialized fishermen move up and down the coast? Is there a role for management to support adaptation of fishermen and communities or should this be left to market forces? Are there other ways management can support fisher adaptation?

- As the ocean gets busier, there were numerous calls to investigate **spatial planning and ocean zoning** to minimize conflicts. Improved spatial data was also referenced on numerous occasions. Are there opportunities to expand coordination and partnerships with new ocean users to ensure an orderly expansion of ocean users?

- As coastal areas get busier with people and commercial uses, fishery managers might have to get involved in **maintaining and increasing shoreside access and increased participation** for anglers, and more generally as a vehicle for environmental justice.

This list of "common issues" should serve as a broad agenda for discussion and action. It is a daunting list of challenges, many of which are long-standing and complex (and given climate change, the complexity and urgency is set to increase). This leads to a couple of implications:

i. It will be important to identify some practical ways in which fishery managers can make progress and achieve some "quick wins" around these issues
ii. Quick wins won't be enough. Fishery managers will need to consider new approaches (and new ways of thinking) to address these and other challenges in future. This might involve more flexible approaches to strategy and decision-making, such as imagining future scenarios, option generation, experimentation, and adaptability.

4. Forthcoming Council and Commission Discussions

The sections above provide a starting point for discussions at Councils and Commission in meetings in November and December. At those sessions, participants will be asked to:

- Review the ideas and reactions by scenarios (Section 2). Do you agree that the issues raised above are the most significant and relevant for this initiative? Are we missing any major issues, challenges or opportunities? What actions make sense to explore in each scenario?
- Review the Common Issues Across Scenarios (Section 3). Do you agree that the issues raised in this section are the most significant and relevant for this initiative? Are the issues, challenges and opportunities described accurately? As you think about what fishery managers will be facing given climate change in the years ahead, is this a good list? What would you add?
- Identify a short list of issues that you feel are particularly relevant for your organization, in that they comprise the most important factors that your organization needs to deal with.
- Propose potential actions that should be discussed at the Summit meeting when representatives from all organizations will gather to propose actions to pursue.
- Discuss the need to develop new approaches to flexible decision-making, such as option generation and experimentation.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 1, 2022

To: Council

From: Jason Didden, staff

Subject: Monkfish Specifications

The following materials support potential action regarding 2023-2025 monkfish specifications and related measures via Monkfish Plan Framework 13 (FW13) for this jointly-managed fishery. Dr. Rachel Feeney of New England Fishery Management Council (NEFMC) staff is the overall lead for monkfish (NEFMC is the lead Council) and will be presenting.

- December 2022 NEFMC meeting outcomes (pending – will be posted as supplemental)
- 11/29/2022 Draft Committee Meeting Summary
- 11/28/2022 Draft Advisory Panel (AP) Meeting Summary
- FW 13 Decision Document
- FW 13 Draft Environmental Assessment (online link only)
- Fall 2022 PDT Meetings Summary
- NEFMC Scientific and Statistical Committee (SSC) Acceptable Biological Catch (ABC) Recommendation; link to supporting documents: https://www.nefmc.org/calendar/oct-26-27-2022-ssc-meeting.
- Monkfish Plan Development Team (PDT) Memo to SSC regarding ABCs
- 2022 Monkfish Fishery Performance Report
- 2022 Management Track Assessment Peer Review Report (monkfish related excerpts)
- 2022 Management Track Assessment Report; link to associated documents: https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php (select 2022 and monkfish)

Committee motions are included in the Draft Committee Summary. Of note, the Committee recommended rejecting all alternatives regarding new specifications and related restrictions. It is not clear what would happen if the Councils adopted such an approach, but NMFS staff should have additional input for the Council meetings. The Committee also recommended increasing the minimum mesh to 12" from the current 10" in 2026 (many already use 12" and implementing in 2026 will minimize impacts for those who would need to switch). The Committee also requested that the NEFMC's SSC re-evaluate the recommended ABC reduction based on a variety of concerns, which will be described in the pending Committee summary and discussed at the NEFMC meeting (occurring the week before the Mid-Atlantic Fishery Management Council meeting). NEFMC meeting outcomes will be posted as supplemental as soon as possible.

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New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

MEETING SUMMARY - DRAFT

Monkfish Committee

Warwick, RI and via webinar

November 29, 2022

The Monkfish Committee (Committee) met on November 29, 2022, in person and via webinar at 10:00 AM to 1) receive the *Monkfish Advisory Panel (AP) report* on their November 28 meeting, 2) receive an update on and recommend final preferred alternatives for *Framework Adjustment 13 to the Monkfish Fishery Management Plan* (FW13) specifications and management measures, 3) make any final recommendations on the *2023 Council Priorities regarding Monkfish*, and 4) discuss other business.

MEETING ATTENDANCE: Ms. Elizabeth Etrie (Chair), Mr. Peter Hughes (Vice Chair), Mr. Pete Christopher (GARFO), Mr. Dan Farnham, Mr. Matt Gates, Mr. Eric Hansen, Mr. Dewey Hemilright, Mr. Scott Olszewski, Mr. John Pappalardo, Mr. Paul Risi, Mr. Alan Tracy, and Ms. Kelly Whitmore. Monkfish Advisory Panel (AP): Mr. Greg DiDomenico (Chair); Council staff: Dr. Rachel Feeney (Plan Development Team (PDT) Chair), Ms. Jenny Couture, Mr. Chris Kellogg, Ms. Janice Plante, Mr. Tom Nies; MAFMC staff: Mr. Jason Didden. Council Chair Mr. Eric Reid. GARFO staff: Mr. Mitch McDonald, Mr. Spencer Talmage. Two other AP members, and about 15 other people attended.

KEY OUTCOMES:

- On Framework Adjustment 13
  - The Committee recommended rejected all alternatives in Action 1 (specifications) and Action 2 (effort controls), then recommended remanding the recommendations of the Scientific and Statistical Committee (SSC) for acceptable biological catches (ABCs) back to the SSC.
  - For Action 3 (monkfish gillnet mesh size), the Committee recommended Alternative 2 Option B (12" minimum mesh size) with a delayed implementation to Fishing Year (FY) 2026.

AGENDA ITEM #1: INTRODUCTIONS, APPROVAL OF AGENDA, AND OTHER UPDATES

The Chair introduced the Committee, welcomed attendees, and sought approval of the agenda. There were no agenda changes. Staff reviewed the timeline for 2022 monkfish work and FY 2022 fishery performance based on monthly in-season quota monitoring.

AGENDA ITEM #2: ADVISORY PANEL REPORT

The AP Chair briefed the Committee on the outcomes of the November 28 AP meeting. On Framework Adjustment 13, the AP recommended status quo specifications, no action for effort controls, and to increase the monkfish minimum mesh to 12", requesting that implementation be delayed to FY 2026. The AP also recommended remanding the 2022 monkfish management track assessment. On 2023 Council management priorities regarding monkfish, the AP recommended prioritizing formation of a working group to ensure the RSA and other research is being used in the assessment process; addressing the sturgeon bycatch reduction recommendations; evaluating whether the current management system provides enough flexibility for the fishery; and exploring managing winter skate and monkfish in one

Fishery Management Plan. The AP also recommended not developing fishery models for predicting how the fishery may respond to effort control. Rather, the AP recommends relying on AP input rather than on models of the fishery. The AP wanted a future Monkfish RSA program priority to be to develop research to address science shortfalls in current assessments and provide funding needed for alternative model development and exploration. Finally, the AP recommended that the monkfish research track assessment be earlier than the current schedule (2027). The AP did not have a quorum through its entire meeting (see AP meeting summary).

The AP Chair noted that much of the AP meeting was focused on AP member concerns about reliance on the Ismooth approach to develop monkfish catch advice, an approach that uses results of the NMFS bottom trawl survey and fishery catch. The Chair reported that advisors feel that monkfish are abundant, but in the fall, have moved away from areas where the trawl survey is conducted. Particularly in the south, monkfish fishing has been occurring after Thanksgiving, later than the survey. Advisory Panel members also noted that the directed fishery primarily uses gillnets and was concerned that the survey uses trawl gear, so may not be catching monkfish as well. AP members were concerned about how long it has been since there was a reliable assessment. See AP meeting summary for other concerns and questions.

AGENDA ITEM #3: FRAMEWORK ADJUSTMENT 13

2022 Management Track Assessment and SSC recommendations

Staff provided an overview of the 2022 monkfish management track assessment, as updated from the preliminary reports at the August 30 Committee meeting (survey trends were reported) and the September NEFMC and MAFMC meetings (preliminary assessment and peer review were reported). Staff then presented an overview of the recommendations of the Scientific and Statistical Committee (SSC) on setting the overfishing limits, acceptable biological catches, and discard deductions.

Committee members asked several questions and shared concerns about the scope of data used to set catch advice, the choice of the Ismooth approach for developing catch advice and related uncertainties, and the reductions in catch that would be needed under the ABCs recommended by the SSC. In the North, a 34% reduction from the current ABC and a 21% reduction from FY 2021 catch. In the South, a 69% reduction from current ABC and a 29% reduction from FY 2021 catch. Staff addressed many questions regarding the assessment and SSC recommendations, reiterating that use of the Ismooth approach was first used in 2016 when the analytical assessment failed. Staff reviewed the history of how ABCs have been set since that time (see staff presentations since March 2022, particularly September NEFMC meeting) Committee. A Committee member asked when recruitment could be used to predict discards. Staff indicated that would potentially come after recruitment is used in the assessment. The Committee reiterated several questions asked by the Advisory Panel such as how recent catch impacts ABC determination. Staff clarified that a basic theory of Ismooth is that biomass is impacted by removals (catch); if the survey is trending downwards, then removals should be lowered from what they have recently been. It was clarified that the spring 2022 survey data were used and the SSC operates by consensus (potentially with minority positions articulated) rather than by motions. The NEFMC Chair asked if fishery catch-per-unit-effort (CPUE) had been calculated and analyzed as an abundance trend. It may fill in some of the information gaps. Staff noted that this is not in the assessment report, but the NEFSC could be asked if this has been calculated.

Public Comment:

- **Ted Platz (AP member, monkfish gillnet fisherman, RI)**: Assessments used the SCALE model until it was rejected. He recalled the fishery being in decline in 1990s but was rebuilt in 2010. Landings and effort were increasing from 2005 to 2015. He feels there is not a biomass issue, but economic issues. There is no early fall fishery because there is no fish then. He feels the survey index contradicts what fishermen know about fishery from 2005 to 2015. He is concerned about a pending fishery collapse. There were no problems until it was decided to use Ismooth. The index

implies that the trawl survey catches one monkfish one out of every three tows, which does not reflect how many monkfish are in the ocean.

- **Greg DiDominico (AP Chair, NJ):** Asked if the SSC and PDT specifically considered the Legault, et al paper as it applied to monkfish when the ABC was developed.

Staff noted that a co-author of the paper is on the PDT, the SSC was provided a link to the paper (which was an assessment document), and three co-authors were present during the SSC meeting (one sits on the SSC).

- **Drew Minkiewicz (Fisheries Survival Fund):** Asked if data in the assessment report from the "NMFS scallop survey" is the Federal survey, noting that it has limited coverage (e.g., not on the Mid-Atlantic Bight), or if the RSA-funded survey data are also used. He also asked if the fishery achieved the catch target year after year and the survey stays the same, would ABC decrease.

Staff confirmed that the data in the report are just from the NMFS scallop survey. Staff reiterated that the SSC set the Ismooth catch advice to be the annual catch target (survey multiplier * recent catch = new ACT), so under that example, no, the ACT and ABC would be the same.

- **Dr. Emerson Hasbrouck (Cornell Cooperative Extension Program)**: Like at the AP meeting, shared the results of his monkfish Research-Set-Aside (RSA) projects that showed there is a single genetic stock across the coast. He asked why this result is not being incorporated into management and why the Councils are still managing monkfish as two separate stocks).

Staff reiterated that that the Councils manage stocks as defined by assessments and that research such as this could be incorporated into the next research track assessment in 2027.

- **James Dopkin (AP member, monkfish gillnet fisherman, NJ)**: Asked if the Ismooth approach includes fishery effort.

Staff clarified that it does not. The following questions were developed throughout the meeting, which would be better addressed by the NEFSC or SSC rather than Council staff.

Questions more related to the assessment

- How do the other data presented in the assessment (e.g., ASMFC shrimp survey, NMFS scallop) compare with the results of the Ismooth approach that relies on the NMFS bottom trawl survey index and fishery catch? Are they consistent? Contradictory? Inconclusive?
- When the Ismooth approach was originally adopted during the 2016 assessment, what was the rationale for determining it is appropriate? The Legault et al manuscript states "Therefore, care is needed when trying to generalize these results across stocks that may have different life histories, exploitation histories, and without unreported catches or increases in *M*." What specific traits about monkfish make it an appropriate candidate for using the Ismooth approach?
- In the Ismooth approach, the index is scaled to the time series mean. Does that time series begin with the beginning of the trawl survey (1963 fall, 1968 spring) or is there a set window of time that shifts forward each assessment? What is the impact of this scaling on the survey multipliers? Can a figure be provided that provides the entire time series of the trawl survey index with the LOESS-smooth line?
- Fishermen are indicating (hearing more from gillnetters in the south) that their fall fishing is starting later in the season, after Thanksgiving because the monkfish are not present earlier. Because the trawl survey is earlier, could it be missing monkfish? Fishermen are concerned that the sonar activity from wind development and/or climate change are moving monkfish away from their traditional fishing areas.
- What information is there on the catchability of monkfish in the survey?
- What is the potential for other assessment approaches and data to be considered?
    - Has a fishery CPUE been calculated and/or can that be provided in assessments?

- Is it possible to create a monkfish index using the industry-funded scallop survey?
- Has there been consideration of CPUE assessment approaches, like is done for tilefish?

Questions more related to the SSC recommendations

- Would the status quo specifications prevent overfishing? Did the SSC decide on this?
- Does the SSC have the latitude to consider other data not provided in the assessment (e.g., scallop industry dredge survey, fishery CPUE)?

Action 1 specifications

Staff then presented the range of Framework 13 alternatives and the preliminary impacts analysis. There were no preliminary questions from the Committee.

Public Comment:

- **Maggie Raymond (industry member, ME):** Asked for the rationale for the range of alternatives for reducing the incidental possession limits by 20% and 40%. Asked if there were alternatives regarding reducing discards in the southern area. Asked if a combination of DAS and possession limit reduction options were selected, could less restrictive options be selected that are in the document.

Staff clarified that this range bounds the 30% reduction in Total Allowable Landings under the SSC's recommended ABCs. Staff noted that the NEFMC decided in June 2022 to not have alternatives regarding reducing southern discards in this action. Staff clarified that, yes, a combination of less restrictive options could be selected.

The Committee discussed the Council's policy on when a remand of an ABC back to the SSC is appropriate and the decision process for joint action. GARFO clarified that NMFS cannot approve the status quo specifications, as they are higher than the SSC-recommended values. GARFO also clarified that without specifications, the ACL would be 0 mt and any catch would be deducted as an accountability measure from a future ACT. GARFO also clarified scenarios where the Regional Administrator could use its authority to implement specifications without Council action. GARFO expects to clarify the process further at the NEFMC meeting. Committee members discussed ideas for how to remand to the ABC. It was noted that the SSC is not an assessment body but uses assessment results to develop catch recommendations. Committee members wondered if a remand would allow enough time to have specifications in place for an on-time start of the fishing year.

Public Comment:

- **Greg DiDomenico:** Asked for clarification on if the MAFMC needs to review the Terms of Reference (TOR) that the NEFMC SSC is provided when developing ABCs.

The NEFMC Executive Director and NOAA General Counsel clarified that the Council with the administrative lead (New England for monkfish, Mid-Atlantic for spiny dogfish) sets the TOR, and that the TORs used in this case were standard. General Council spoke to the decision process and will offer more clarifications at the NEFMC meeting. Several Committee members were hesitant to make final recommendations, with the number of outstanding questions.

- **Maggie Raymond:** Urged the Committee to recommend the SSC-recommended ABCs for one-year and ask the SSC to reconsider the ABC for years 2 and 3. This would ensure that some amount of catch would be allowed come May and not completely disrupt the fishery.

GARFO staff confirmed that setting specifications for one year for monkfish is possible.

Motion #1 (Tracy/Hemilright): For Action 1 (FY 2023-2025 Specifications), the Committee recommends that the Council select Alternative 2 (Status Quo) as preferred.

Rationale: Based on discussions during SSC, AP, and today's Committee meeting, the SSC recommendation would create drastic reductions. There are unanswered questions about the assessment and procedures that need to be answered.

Motion to substitute (Hughes/Risi): For Action 1 (FY 2023-2025 Specifications), the Committee recommends that all Action 1 alternatives be moved to Considered but Rejected.

Rationale: Originally thought there would be an increase in specifications, not a decline. Ismooth does not allow for estimation of reference points. Alternative 2 (status quo) is not an approvable option by GARFO (above the SSC recommendation), and Alternative 3 would suppress the fishery substantially. There is no statement or analysis that says Alternative 2 would lead to overfishing.

Elizabeth "Libby" Etrie, Chair	No vote	Dewey Hemilright	No
Peter Hughes, Vice Chair	Yes	Scott Olszewski	No
Pete Christopher	No	John Pappalardo	Yes
Dan Farnham	Yes	Paul Risi	Yes
Matt Gates	Yes	Alan Tracy	No
Eric Hansen	Yes	Kelly Whitmore	Yes

The motion to substitute carried 7/4/0.

Main motion (Hughes/Risi): For Action 1 (FY 2023-2025 Specifications), the Committee recommends that the Council that all Action 1 alternatives be moved to Considered but Rejected.

Elizabeth "Libby" Etrie, Chair	No vote	Dewey Hemilright	Yes
Peter Hughes, Vice Chair	Yes	Scott Olszewski	No
Pete Christopher	No	John Pappalardo	Yes
Dan Farnham	Yes	Paul Risi	Yes
Matt Gates	Yes	Alan Tracy	No
Eric Hansen	Yes	Kelly Whitmore	Yes

The main motion carried 8/3/0.

Discussion of the motion: Many of the previously stated questions and concerns were reiterated.

Public Comment (throughout above Motion 1 discussion):

- **Maggie Raymond:** Reminded that the Council remanded the witch flounder ABC. It took a lot of time and effort and only resulted in a 100 mt increase of quota. She urged the Committee to identify specific criteria for a remand. She did not support either the original motion or motion to substitute as it would likely disrupt the fishery more if regulations were not in place.
- **James Dopkin:** Noted that Ismooth was acceptable in prior years but now it is a bad predictor. He felt that the SSC did their job, but the inputs are off. He recommended status quo specifications.
- **Liam Sullivan (monkfish fisherman, RI):** Felt that fishermen will suffer under the SSC's recommendation. He is concerned about flaws being carried throughout the whole process.
- **Ted Platz:** Felt that this is a lose-lose scenario. There is a healthy fishery now but a bad assessment. He supported the motion to substitute. He did not want to cave to what he felt was bad science.
- **Kevin Sullivan (monkfish fisherman, RI):** Agree with Liam. He is seeing a lot of monkfish. There are fewer boats and costs are way up. He feels the fishery cannot take these hits.
- **Greg DiDomenico:** Supports the motion to substitute.

Action 2 Effort Controls

The Chair called for comments and motions for selecting alternatives for effort controls. There were none.

Action 3 Monkfish Gillnet Mesh

The Chair then called for comments and motions for selecting alternatives for gillnet mesh.

Motion #2 (Farnham/Gates): For Action 3 (Gillnet Mesh), the Committee recommends that the Council select Alternative 2, Option B (12" minimum) as preferred. The Committee recommends revising Alternative 2 to have the implementation of this measure delayed until FY 2026 (i.e., not FY 2025 as stated in the Framework).

Rationale: Most fishermen use the larger mesh already and the delayed implementation would lessen the impact of the cost to replace gear.

Public Comment:

- **Ted Platz**: Most fishermen replace their gillnets every five to six years.

Elizabeth "Libby" Etrie, Chair	No vote	Dewey Hemilright	No vote
Peter Hughes, Vice Chair	Yes	Scott Olszewski	Yes
Pete Christopher	Yes	John Pappalardo	Yes
Dan Farnham	Yes	Paul Risi	Yes
Matt Gates	Yes	Alan Tracy	Yes
Eric Hansen	Yes	Kelly Whitmore	Yes

The motion carried 10/0/0.

Action 2 Effort Controls

The Chair again called for comments and motions for selecting alternatives for effort controls. A Committee member was concerned that if effort control alternatives remained in the document, then GARFO could have the latitude to choose one if the Councils did not take action.

Motion #3 (Hughes/Farnham): For Action 2 (Effort Controls), the Committee recommends that all Action 2 alternatives be moved to Considered but Rejected.

Rationale: Originally thought there would be an increase in specifications, not a decline. Ismooth does not allow for estimation of reference points. Alternative 2 (status quo) is not an approvable option by GARFO (above the SSC recommendation), and Alternative 3 would suppress the fishery substantially. There is no statement or analysis that says Alternative 2 would lead to overfishing.

Public Comment:

- **Maggie Raymond:** Did not support rejecting all the alternatives in Actions 1 and 2. Doing so only removes the Council from having input in management.
- **Greg DiDomenico:** supported the motion.
- **Ted Platz:** supported the motion.

Elizabeth "Libby" Etrie, Chair	No vote	Dewey Hemilright	Yes
Peter Hughes, Vice Chair	Yes	Scott Olszewski	No
Pete Christopher	No	John Pappalardo	Yes
Dan Farnham	Yes	Paul Risi	Yes
Matt Gates	Yes	Alan Tracy	Abstain
Eric Hansen	Yes	Kelly Whitmore	Abstain

The motion carried 7/2/2.

Action 1 Specifications

Motion #4 (Hughes/Gates): The Committee believes the Ismooth model has deficiencies and may be unsuitable to the monkfish fishery and we would ask that the SSC reevaluate the FY 2023-2025 ABC recommendation.

Rationale: The index-based methods paper (Legault, et al.) and the paper's peer reviews cautioned against over-generalizing the results without considering the specific life history and catch history of monkfish and maybe that is an error or omission.

Discussion on the Motion: NEFMC Chair Reid cautioned that the SSC does not have much latitude to reevaluate the assessment and urged that specific criteria be developed that meets the Council's policy. Some of the above concerns and questions were reiterated about the original decision to use Ismooth in 2016 and if the SSC considered the work of the Index-Based Methods Working Group report and peer review reports.

Public Comment:

- **Greg DiDomenico**: Concerned that the MAFMC was not consulted on the TOR for the SSC.

The Committee Chair noted that General Counsel indicated earlier in the meeting that this was not an issue.

Elizabeth "Libby" Etrie, Chair	No vote	Dewey Hemilright	Yes
Peter Hughes, Vice Chair	Yes	Scott Olszewski	Yes
Pete Christopher	Abstain	John Pappalardo	Yes
Dan Farnham	Yes	Paul Risi	Yes
Matt Gates	Yes	Alan Tracy	Yes
Eric Hansen	Yes	Kelly Whitmore	Yes

The motion carried 10/0/1.

Staff indicated that the questions raised by the Committee would be raised prior to the NEFMC Meeting.

AGENDA ITEM #3: 2023 COUNCIL MANAGEMENT PRIORITIES

Staff reviewed the draft 2023 priorities and recent PDT and AP recommendations to consider in making final recommendations on what the Council should work on next year regarding monkfish, including any ranking of priorities.

A Committee member asked if FW13 should be on the priority list. Staff noted that if the Council agrees to remand the ABC, then work on this action will certainly continue into 2023 and need to be on the priority list. A Committee member suggested that monkfish have a CPUE-based assessment. Staff clarified that this idea would not be a Council task. A Committee member asked what happens to the research recommendations of assessment peer reviews. Staff clarified that they can be listed on the Council's priority list, but such lists help the NEFSC to design work to improve research track assessments. There were no motions or consensus statements.

AGENDA ITEM #4: OTHER BUSINESS

No other business.

The meeting adjourned at 5:15 pm.

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

MEETING SUMMARY - DRAFT

Monkfish Advisory Panel

Webinar

November 28, 2022

The Monkfish Advisory Panel (AP) met on November 28, 2022, via webinar at 10:00 AM to give input on 1) the *Framework Adjustment 13 to the Monkfish Fishery Management Plan* (FW13) specifications and management measures, 2) the *2023 Council Priorities regarding Monkfish*, and 3) other business.

MEETING ATTENDANCE: Mr. Greg DiDomenico (AP Chair), Mr. James Dopkin, Mr. Greg Mataronas, Mr. Ted Platz, Mr. Chris Rainone, and Mr. Tim Froelich. NEFMC Council staff: Dr. Rachel Feeney (Plan Development Team (PDT) Chair), Ms. Jenny Couture, Chris Kellogg, and Janice Plante. GARFO staff: Danielle Palmer and Spencer Talmage. NEFMC Monkfish Committee Chair (Ms. Elizabeth Etrie), five other Committee members, and Council Chair Eric Reid. MAFMC staff: Mr. Jason Didden. About eleven other people attended.

KEY OUTCOMES:

- On Framework Adjustment 13
  - Specification alternatives (Action 1): recommended Alternative 2 (Status Quo).
  - Effort control alternatives (Action 2): recommended Alternative 1 (No Action).
  - Gillnet mesh size (Action 3): recommended Alternative 2 Option B (12" minimum mesh size) with a delayed implementation to Fishing Year (FY) 2026.
  - Recommended remanding the 2022 monkfish management track assessment.
- On 2023 Council management priorities regarding monkfish, recommended prioritizing formation of a working group to ensure the RSA and other research is being used in the assessment process; addressing the sturgeon bycatch reduction recommendations; evaluating whether the current management system provides enough flexibility for the fishery; and exploring managing winter skate and monkfish in one Fishery Management Plan. The AP made three other recommendations.
- Under other business, the AP Chair requested clarification on what happens if FW13 is not completed on time and if federal regulations require both NEFMC and MAFMC to review the Terms of Reference for the NEFMC SSC when it recommends a monkfish ABC.

AGENDA ITEM #1: INTRODUCTIONS, APPROVAL OF AGENDA, AND OTHER UPDATES

The AP Chair introduced the advisors, welcomed attendees, and sought approval of the agenda. There were no agenda changes. Staff reviewed the timeline for 2022 monkfish work and FY 2022 fishery performance based on monthly in-season quota monitoring. There was a brief discussion on who on the AP is active in the monkfish fishery. Staff noted that the new AP term starts in January and that the applicants are under review by the Executive Committee, taking into account prior participation in AP meetings. The results of the review are not yet available.

AGENDA ITEM #2: FRAMEWORK ADJUSTMENT 13

Specifications

Staff provided an update on the development of 2023-2025 specifications including summarizing the outcomes of the 2022 management track assessment and peer review; the Scientific and Statistical Committee (SSC) recommendations on setting the overfishing limits, acceptable biological catches, and discard deductions; the range of alternatives, and the impact analysis.

Discussion: Advisers asked several questions including the terminal year of the survey index (last year of data, 2022 for spring and 2021 for fall), data used to calculate the Ismooth catch advice (the last three years of total fishery monkfish catch and the trawl survey multiplier), if there were missing surveys and stations in the survey (no survey in 2020), and the assumed discard mortality rate being used (100% except for the newly revised rate of 64% in the scallop dredge gear). Regarding the discard mortality rate, one adviser stressed that 100% is inaccurate. He noted his participation in a winter skate tagging study that showed discard mortality of skate was 11%. Staff noted that like to revising the scallop dredge gear discard mortality rate, other research on discard mortality can be incorporated into the next assessment.

Several members expressed frustration with the assessment process and the outcome given they believe monkfish are very abundant and that the trawl survey is not sufficient for estimating monkfish abundance. Several AP members active in the southern management area pointed out that the trawl survey is done in the early fall when the fish are no longer present; fishermen begin targeting monkfish after Thanksgiving in recent years given warming waters and impacts from offshore wind development have changed fish distribution. One member stated that the last three years of fishing catch are not indicative of future fishing effort because of the pandemic, high fuel prices, low monkfish prices, etc. The AP generally thought the main issue is that the science does not match what fishermen observe on the water.

Regarding the Ismooth method and results, the AP Chair reiterated that the assessment is not an appropriate approach for monkfish given the method was generalized for a groundfish stock, and that the Legault, et al. paper includes several cautions with using the Ismooth approach. The Committee Chair stated that the Ismooth approach was first adopted in 2016 after the analytical assessment failed. She agreed that the decline in survey indices will cause disruptions in the fishery but that this is the method approved to be used for the fishery as a backup for the rejected analytical assessment. Questions about the assessment method can be discussed during the upcoming NEFMC meeting after the assessment scientist's presentation on December 6th.

Several AP members further discussed frustration with the Ismooth approach. More specifically, that the method does not account for other reasons why catch declines beyond a decline in biomass including economic factors, skate limits, high bait skate prices, lack of labor, DAS management versus quota management, labor availability, etc. The approach is self-perpetuating and causes a downward spiral in catch advice. The economic factors are preventing fishermen from achieving their total allowable landings. Advisers objected to using the Ismooth model for setting catch advice for FY2023-2025 and suggested selecting status quo given what they see as a bad assessment and high monkfish abundance. One adviser commented that the fishing is good, and if there is no crisis then there is no management. Additional questions on the Ismooth method were discussed including why the time series of the trawl survey is scaled to 1 (to help determine the slope multiplier of the last three years) and if all sources of discards are included in the discard deduction (yes).

Public Comment:

- **Josiah Dodge (new monkfish fishermen)**: Stated that he is a new monkfish fishermen and inherited his vessel from his father. He is concerned with large decreases in DAS and commented that this unexpected DAS reduction, warming waters, offshore wind development, and high diesel fuel prices will substantially impact his ability to survive fishing. There is a need for better science, use of gillnet versus trawls for surveys, and inclusion of more data such as observer data.

- **Drew Minkiewicz (Fisheries Survival Fund)**: Asked if catch stays below the ACL, then that will lead to lower catch advice in future years based on the Ismooth method.

Staff noted that if the survey trend is increasing then catch advice would increase too if the magnitude of the survey catch outweighs any decline in catch. If the survey index shows a flat trend and catch is also decreasing, then catch advice would decrease.

- **Dan Farnham (Monkfish Committee member)**: Asked if catch per unit effort (CPUE) data are available for the directed monkfish gillnet fishery and how the pandemic impacted the trawl surveys.

Staff answered that CPUE data were not in the assessment report and that the missing 2020 survey value was imputed, taking an average of 2019 and 2021 survey data.

- **Emerson Hasbrouck (Cornell Cooperative Extension Program)**: Shared the results of his monkfish Research Set Aside (RSA) projects that showed there is a single genetic stock across the coast. He asked why this result is not being incorporated into management and why the Councils are still managing monkfish as two separate stocks).

Staff answered that the Councils manage stocks as defined by assessments and that research such as this could be incorporated into the next research track assessment in 2027.

1. **Motion (Rainone/Platz):** For Action 1 FY 2023-2025 Specifications, the AP recommends to the Committee Alternative 2 (status quo).

Rationale: There is insufficient data. The fishery is not fishing in the early fall when the trawl survey is happening, so the AP feels that the survey timing is off. The last six years of status quo specifications have produced a consistently increasing biomass of monkfish. Given the recent pandemic and the resulting fish prices, the fishery has had severely reduced landings. That should not be used against the fishery.

Discussion of the motion: The Committee Chair cautioned that the Status Quo recommendation is higher than the SSC recommendation which could mean NOAA Fisheries deems this action is inconsistent with the Magnuson-Stevens Act and be thus unable to approve this action. She noted that this will be discussed further during the Committee meeting the following day (November 29th).

Greg DiDomenico	No vote	Randall Morgan	Absent
James Dopkin	Yes	Nicholas Muto	Absent
Tim Froelich	Yes	John Our	Absent
Michael Karch	Absent	Ted Platz	Yes
Greg Mataronas	Yes	Chris Rainone	Yes
Bill McCann	Absent		

Motion 1 carried 5/0/0 with a quorum.

Effort Controls

Regarding effort controls, staff presented the range of alternatives and the preliminary impact analyses for separate monkfish Day-at-Sea (DAS) allocation by area and reduction of DAS allocations (Action 2) and reduction in incidental possession limits while using a Northeast Multispecies DAS for permit category C and D vessels (Action 3).

Discussion: A couple of AP members disagreed with the idea that if fishermen are only on a Northeast (NE) Multispecies DAS that they are not targeting monkfish in the north. Several fishermen set gillnet gear on the side of fishing for groundfish and that the Council created the ability to add a monkfish DAS

while out at sea. Reducing DAS will pressure fishermen to high-grade which means there will be longer soak times to harvest the full monkfish limit and achieve the best price, so not likely to lead to substantial discards. When fishermen use all of their monkfish DAS, then they will likely fish on a NE Multispecies DAS to fish skate and discard any monkfish over the incidental limits. Fishermen will continue fishing, thus any option other than status quo for effort controls would lead to an increase in monkfish discards. Another adviser pointed out that the directed monkfish fishery has the lowest discards, so it is not sensible to reduce the monkfish DAS. The directed fishery would have a high negative economic impact. A few advisers commented that the monkfish fishery is healthy.

Public Comment:

- **Patrick Duckworth (monkfish fishermen)**: Agreed with the AP comments that fishermen would switch to using a groundfish DAS if monkfish DAS are reduced and that the northern fishermen do target monkfish even if on only a groundfish DAS.

A quorum was lost prior to when Motion #2 was made.

2. **Motion (Platz/Mataronas; no quorum):** For Action 2 Effort Controls, the AP recommends to the Committee the No Action alternative.

Rationale: The fishery is abundantly healthy, and we should be considering increases in DAS. To reduce effort controls is not rational.

Discussion of the motion: One adviser wanted clarity on what happens if both NEFMC and MAFMC reject all options in the FW13 document and if FW13 is not submitted to NOAA Fisheries by February 1. Staff clarified that the ACL would be 0 lb beginning on May 1 because the fishery does not have default specifications in place.

Greg DiDomenico	No vote	Randall Morgan	Absent
James Dopkin	Yes	Nicholas Muto	Absent
Tim Froelich	Absent	John Our	Absent
Michael Karch	Absent	Ted Platz	Yes
Greg Mataronas	Yes	Chris Rainone	Yes
Bill McCann	Absent		

Motion carried 4/0/0. The AP did not have a quorum. The majority of those present supported the motion. Prior to leaving the meeting (before this motion was on the board), Tim Froelich indicated that he supports status quo effort controls. The Chair noted his support of this motion.

A quorum was then regained.

Gillnet Mesh Size

Regarding gillnet mesh size, staff presented the alternatives and impact analyses in the FW13 document on potentially increasing gillnet mesh size from 10" to either 11" or 12".

Discussion: One adviser requested a 3-year delay (one additional year than what is included in the FW13 document) to help minimize the economic costs for the few fishermen using < 12" mesh and to help sync with the specification setting process. The larger mesh helps minimize discards in the skate and monkfish fishery, improves general custodial of the fishery, and is long overdue given most fishermen already use this larger mesh size.

3. **Motion (Platz/Dopkin):** For Action 3 Gillnet Mesh, the AP recommends to the Committee Alternative 2, Option B (12" minimum). The AP supports a delayed implementation to FY 2025 (as written) but requests a delayed implementation until FY 2026.

Rationale: Delaying implementation another year would allow more of the impacted vessels to adjust. Virtually everyone in the fishery is using 12" already. This change is overdue, and the fishery has already moved to using larger mesh to better optimize monkfish landings and reduce catch of unwanted fish.

Discussion of the motion: No other discussion on the motion.

Greg DiDomenico	No vote	Randall Morgan	Absent
James Dopkin	Yes	Nicholas Muto	Absent
Tim Froelich	Yes	John Our	Absent
Michael Karch	Absent	Ted Platz	Yes
Greg Mataronas	Yes	Chris Rainone	Yes
Bill McCann	Absent		

Motion carried 5/0/0 with a quorum.

Tim Froelich had not been present for the vote on Motion #2 on effort controls. He then indicated his support of Motion #2.

4. **Motion (Platz/Rainone):** The AP believes that the Ismooth model has known deficiencies and is unsuitable for the monkfish fishery. The AP rejects Ismooth as a model for this fishery and asks that the 2022 assessment be remanded. The AP asks that the MAFMC and its SSC be included in the science and model development for this fishery.

Rationale: The results of the Ismooth are wildly inconsistent with the biomass reality of the current fishery and suggest management actions that undermine a perfectly healthy fishery.

Discussion of the motion: One adviser asked about the ability to land an additional DAS' worth of fish on a trip. Staff clarified that was previously included in the alternatives, but the NEFMC removed this in September when it learned that catch reductions were likely needed and this could increase fishing effort. The AP Chair noted that this can be brought up in a future action.

A few other advisers expressed interest in status quo to help with business planning and to help offset high fuel prices. The advisers reiterated that the stock is healthy and there is desire to do collaborative research with the gillnet fishery to produce a better stock assessment. It is unclear why the trawl survey data is being used to inform a directed gillnet fishery's catch advice.

Greg DiDomenico	No vote	Randall Morgan	Absent
James Dopkin	Yes	Nicholas Muto	Absent
Tim Froelich	Yes	John Our	Absent
Michael Karch	Absent	Ted Platz	Yes
Greg Mataronas	Yes	Chris Rainone	Yes
Bill McCann	Absent		

Motion carried 5/0/0 with a quorum.

AGENDA ITEM #3: 2023 COUNCIL MANAGEMENT PRIORITIES

Staff reviewed the draft 2023 priorities and recent PDT recommendations for the AP to consider in making final recommendations on what the Council should work on next year regarding monkfish, including any ranking of priorities.

Discussion: One adviser commented that the stock assessments have been inaccurate in the fishery since 2001. From 2010 to 2016, assessments indicated that effort could be doubled, which one adviser noted he did not believe, and now the current assessment suggests that effort should be dramatically reduced. There was a suggestion to use the RSA program to help the science community develop a better model for the monkfish fishery and help reduce sturgeon bycatch. Another adviser did not think a model to help determine the impact of changing effort controls is needed given that is the AP's job. The stock assessment is the limiting factor; the AP and the Committee should work together to look at RSA collected data and other research that should be used in the assessment process. The Committee Chair commented that this type of approach (incorporating new data) is most likely to be used in a research track assessment (next one scheduled for 2027), not a management track assessment. The MAFMC PDT member spoke about his experience with the spiny dogfish fishery which had a similar aging issue as

monkfish and a delayed assessment process due to waiting for new data. It is unclear whether there is the necessary data to complete a research track assessment (e.g., age structure data, length data, etc.). One adviser reiterated his desire to have the research track be prioritized first before another management track assessment.

One adviser suggested forming a small working group of a scientist, an adviser, and a Committee member to look at previous RSA data and project findings. The adviser commented that one of the reasons monkfish catch is lower than expected is because of high bait price and high abundance of winter skate. He suggested including winter skate in the monkfish fishery because of the high abundance of winter skate, which is limiting the monkfish fishery given the skate limits are being harvested first. Several fishermen are harvesting both winter skate and monkfish together so joint decisions and recommendations on these species is reasonable.

The AP lost quorum part-way through developing this statement.

Consensus Statement #1 (no quorum): The AP recommends the following for 2023 Council work priorities:

1. Form a work group of Committee and AP members to ensure that RSA and other monkfish research is being used in the assessment process. We need more follow-up on if prior research was used and if not, why not, to help solve problems.
2. Address monkfish recommendations in the NOAA Fisheries Action Plan to Reduce Atlantic Sturgeon Bycatch in Federal Large Mesh Gillnet Fisheries.
3. Evaluate whether the current management system (i.e., reliance on monkfish DAS and possession limits to control catch) provides enough flexibility to adjust the directed, incidental and discard fisheries to changing quotas.
4. Explore removing winter skate from the Skate FMP and move it into the Monkfish FMP. Given the overlap, this will put the interested people in the same room and will improve management.

Other AP recommendations:

1. The AP recommends not developing fishery models for predicting how the fishery may respond to effort control. Rather, the AP recommends relying on AP input rather than on models of the fishery.
2. A future Monkfish RSA program priority should be to develop research to address science shortfalls in current assessments and provide funding needed for alternative model development and exploration.
3. That the Council recommend to the Northeast Regional Coordinating Committee that the monkfish research track assessment be earlier than the current schedule (2027).

The AP did not have quorum when the above statement was finalized, but there was no objection to this statement from AP members present.

Discussion of the consensus statement: There was no other discussion on the consensus statement.

AGENDA ITEM #4: OTHER BUSINESS

The AP Chair reiterated his uncertainty over what happens if the framework document is not complete in time and continued to ask whether federal regulations require both NEFMC and MAFMC to review the Terms of Reference for the NEFMC SSC when it recommends a monkfish ABC.

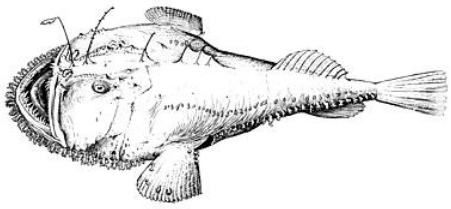
The Monkfish Committee Chair thanked the AP Chair for his service on the AP and as Chair. This is the last meeting before his term ends.

The meeting adjourned at 3:15 pm.

DECISION DOCUMENT

Monkfish Fishery Management Plan

Framework Adjustment 13



This document was developed to help the NEFMC select preferred alternatives for Framework Adjustment 13.

December 1, 2022

Version – NEFMC

Anticipated Council Action:

Prior to selecting final preferred alternatives, Council staff will present the measures under consideration in Framework Adjustment 13 and their draft analyzed impacts on target species, non-target species, protected resources, physical environment (EFH), and human communities (economic and social impacts). Council staff will also answer questions, as needed, about the document.

1. Select *preferred alternatives* in each of the actions in Framework Adjustment 13
    a. Action 1: Fishing Year (FY) 2023-2025 specifications
    b. Action 2: Effort controls (Days-at-Sea and incidental possession limits)
    c. Action 3: Monkfish gillnet mesh size
2. Motion to submit Framework Adjustment 13 to NOAA Fisheries.

Note: Monkfish is managed under a joint management plan with the MAFMC. The MAFMC will select preferred alternatives during its meeting December 12-15, 2022.

Per the monkfish fishery regulations:

> "Management adjustments made to the Monkfish FMP require majority approval of each Council for submission to the Secretary"
>
> "If either the NEFMC or MAFMC has rejected all options, then the Regional Administrator may select any measure that has not been rejected by both Councils and that meets the Monkfish FMP's goals and objectives."
>
> "If the Councils fail to submit a recommendation to the Regional Administrator by February 1 that meets the goals and objectives of the Monkfish FMP, the Regional Administrator may implement through rulemaking in accordance with the Administrative Procedure Act one of the options reviewed and not rejected by either Council, provided the option meets the goals and objectives of the Monkfish FMP, and is consistent with other applicable law."

Action 1 – FY 2023-2025 Specifications

Section 4.1 – Action 1 – FY 2023-2025 Specifications *Choose one alternative*		Preferred by	
		AP	**Committee**
Alternative 1 (Sec. 4.1.1)	**No action** OFL = 0 mt; ACL = 0 mt; TALs = 0 mt		REJECT
Alternative 2 (Sec. 4.1.2)	**Status Quo** North: OFL = 17,805 mt; ACL = 8,351 mt; TAL = 6,624 mt South: OFL = 23,204 mt; ACL = 12,316 mt; 5,882 mt Discard deduction = 3-year mean discard:catch	√*	REJECT
Alternative 3 (Sec. 4.1.3)	**Updated Specifications (SSC recommendation)** North: OFL = undetermined; ACL = 5,526.0 mt; TAL = 4,631.7 mt South: OFL = undetermined; ACL = 3,766.0 mt; 1,448.5 mt Discard deduction = 10-year median discards		REJECT**

Decisions/Questions/Information to Consider

* The AP recommends that the 2022 assessment be remanded and the MAFMC SSC be included in the science and model development for this fishery.

** The Committee recommends that the SSC reevaluate the FY 2023-2025 ABCs recommendations.

The 2022 management track assessment report and peer review report are provided under Tab 1.8.

The SSC memo to the NEFMC on recommendations for specifications is provided under Tab 12.

The *NEFMC Operations Handbook* includes a policy on remanding ABC recommendations back to its SSC (See page 20, also listed in staff slides). A remand needs to meet one of the four criteria listed.

Should the Council approve a remand, then the Council would not be selecting a preferred alternative for Action 1 at this meeting.

The NEFMC is the lead Council for the Monkfish FMP, and the lead Council takes final action first. If the NEFMC takes final action in January 2023, the MAFMC could take final action in February. If this is not possible, then the next regular Council meetings to take final action would be the NEFMC in April followed by the MAFMC in June. However, either Council could call a special meeting for this purpose. There could be operational issues with starting the fishing year on May 1 with delays in final action.

There are no default specifications for the monkfish fishery. Without specifications, the fishing year starts on May 1 with an ABC and Annual Catch Limit of 0 mt. The accountability measure would still be in place: a pound-for-pound deduction from the Annual Catch Target in the second year following the year that catch (landings and discards) exceeds the ACL. During the NEFMC meeting, NOAA Fisheries is being asked to clarify if and what catch would be allowed under this scenario and the conditions that allow the Secretary of Commerce to take administrative action to implement specifications.

Other important Considerations/Draft EA References

Document #2a is the draft environmental assessment (summary table of impacts on p. 6 of decision document):

- Target species impacts: Section 6.2.1 (p. 84)
- Non-target species impacts: Section 6.3.1 (p. 88)
- Protected resource impacts: Section 6.4.1 (p. 91)
- Impacts on physical environment and Essential Fish Habitat: Section 6.5.1 (p. 95)
- Human community impacts: Section 6.5.1 (p. 98)

Action 2 – Effort Controls

Section 4.2 – Action 2 – Effort Controls *The Council may choose Alternative 2 and 3. Within Alternative 2, choose one option for North and one option for South. Within Alternative 3, choose one option.*		**Preferred by**	
		AP	**Committee**
Alternative 1 (Sec. 4.2.1)	**No action** 46 (45.2 after RSA deduction) DAS for each limited access monkfish permit, 37 of which may be used in the South	√	REJECT
Alternative 2 (Sec. 4.2.2)	**Separate monkfish DAS allocation by area, reduce DAS allocation** North DAS options: • Option A = 20 DAS • Option B = 10 DAS • Option C = 0 DAS South DAS options: • Option A = 20 DAS • Option B = 10 DAS • Option C = 0 DAS		REJECT
Alternative 3 (Sec. 4.2.3)	**Reduce NFMA permit category C and D incidental possession limits** • Option A = 20% reduction • Option B = 40% reduction		REJECT
Decisions/Questions/Information to Consider			
Document #2a is the draft environmental assessment. Section 6.1.1 includes analyses for how these effort control options would have reduced recent fishery landings and compares these reductions to the landings reduction that would be necessary to keep landings within the FY 2023-2025 TALs proposed under Action 1, Alternative 3.			
Other important Considerations/Draft EA References			
Document #2a is the draft environmental assessment (summary table of impacts on p. 6 of decision document): • Target species impacts: Section 6.2.2 (p. 85) • Nontarget species impacts: Section 6.3.2 (p. 89) • Protected resource impacts: Section 6.4.2 (p. 93) • Impacts on physical environment and Essential Fish Habitat: Section 6.5.2 (p. 96) • Human community impacts: Section 6.6.2 (p. 100)			

Action 3 – Monkfish Gillnet Mesh Size

Section 4.3 – Action 3 – Gillnet Measures *If the Council chooses Alternative 2, choose one option.*		**Preferred by**	
		AP	**Committee**
Alternative 1 (Sec. 4.3.1)	**No action** 10" minimum mesh size when on a Monkfish-only DAS, also in the GOM/GB Dogfish and Monkfish Gillnet Fishery Exemption Area.		
Alternative 2 (Sec. 4.3.2)	**Increase gillnet mesh size** Increase minimum mesh size when on a Monkfish-only DAS, also in the GOM/GB Dogfish and Monkfish Gillnet Fishery Exemption Area. Two-year implementation delay (FY 2025). • Option A = Increase to 11" • Option B = Increase to 12"	√* **(Option B)**	√** **(Option B)**
Decisions/Questions/Information to Consider			
This would not impact vessels fishing only for dogfish in the GOM/GB exemption area (Document #4a, p. 17). * The AP requests delayed implementation until FY 2026 to allow more impacted vessels to adjust. ** The Committee recommends delayed implementation until FY 2026.			
Other important Considerations/Draft EA References			
Document #2a is the draft environmental assessment (summary table of impacts on p. 6 of decision document): • Target species impacts: Section 6.2.3 (p. 87) • Nontarget species impacts: Section 6.3.3 (p. 90) • Protected resource impacts: Section 6.4.3 (p. 94) • Impacts on physical environment and Essential Fish Habitat: Section 6.5.3 (p. 97) • Human community impacts: Section 6.6.3 (p. 105)			

Table 1 – Summary of potential impacts of the alternatives under consideration in Framework 13 across the valued ecosystem components.

Actions & Alternatives			Direct and Indirect Impacts				
			Target Species	**Non-target Species**	**Protected Resources**	**Physical Env. (EFH)**	**Human Communities**
Action 1: ABC, ACL, TAL	**Alt. 1: No Action**		Uncertain or moderate +	Positive	Slight + to moderate +	Slight +	Economic: High - Social: High -
	Alt. 2: Status Quo		Uncertain or slight -	Slight +	Slight – to slight +	Slight -	Economic: Moderate + Social: Moderate +
	Alt. 3: Update (SSC Rec.)		Uncertain or moderate +	Moderate +	Slight – to moderate +	Slight -	Economic: Negative Social: Moderate -
Action 2: Effort Controls	**Alt. 1: No Action**		Slight -	Negligible	Slight – to slight +	Slight -	Economic: Negligible Social: Slight -
	Alt. 2: Separate DAS Alloc. by area, Reduce DAS	**Option 2A: 20 DAS**	Slight +	Slight +	Slight -	Slight -	Economic: Negative Social: Slight -
		Option 2B: 10 DAS	Slight + to moderate +	Slight + to moderate +	Slight – to moderate +	Slight -	Economic: Negative Social: Slight -
		Option 2C: 0 DAS	Moderate +	Moderate +	Moderate +	Slight -	Economic: Negative Social: Slight -
	Alt. 3: Reduce NFMA Incidental Limits	**Option 3A: 20% reduction**	Negligible to slight +	Negligible to slight +	Slight – to slight +	Slight -	Economic: Negative Social: Slight -
		Option 3B: 40% reduction	Negligible to slight +	Negligible to slight +	Slight – to slight +	Slight -	Economic: Negative Social: Slight -
Action 3: Monkfish Gillnet Mesh Size	**Alt. 1: No Action**		Slight -	Slight -	Slight – to slight +	No impact	Economic: Negligible Social: Slight +
	Alt. 2: Increase Mesh Size	**Option A: Increase to 11”**	Slight +	Slight +	Slight – to slight +	No impact	Economic: Slight - Social: Slight +
		Option B: Increase to 12”	Slight +	Slight +	Slight – to slight +	No impact	Economic: Slight - Social: Slight +

The Draft Environmental Assessment for Monkfish FW 13 is available at:

https://www.nefmc.org/library/december-2022-monkfish-committee

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New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

MEETING SUMMARY

Monkfish Plan Development Team

webinars

September 27, October 18, November 2, 2022

The Monkfish Plan Development Team (PDT) met on September 27, October 18, and November 2, 2022, via webinar to continue work on Framework Adjustment 13 to the Monkfish Fishery Management Plan and develop recommendations for 2023 monkfish work priorities. This document summarizes these three meetings and the related PDT correspondence.

MEETING ATTENDANCE

Dr. Rachel Feeney (PDT Chair), Jenny Couture (NEFMC); Sharon Benjamin, Danielle Palmer, Spencer Talmage, and Kris Winiarski (NMFS/GARFO); Dr. Jon Deroba and John Walden (NMFS/NEFSC); Jason Didden (MAFMC); Renee St. Amand (CTDEEP), Eric Schneider (RIDEM) and Dr. Tara Dolan (MADMF). Monkfish Committee Chair Libby Etrie, Committee member Kelly Whitmore, and a few members of the public attended.

FRAMEWORK ADJUSTMENT 13

September 27

On September 27, the PDT was presented with the results of the 2022 monkfish management track assessment and the preliminary findings of its peer review, which happened the week prior, and developed potential overfishing limits (OFL) and acceptable biological catches (ABC) for the Scientific and Statistical Committee to consider in late October. The PDT discussed how the catch time series was updated with the new (lowered) dredge discard mortality rate, how missing trawl survey data in 2020 was treated (used the mean of the surrounding years as a proxy), and how the 2015-year class seems to have been short lived (was either not as big as was thought or may have been largely caught as juveniles). The peer review report was not available, but the PDT discussed how the reviewers seemed to agree that the Ismooth method for developing catch advice is appropriate but did not reach consensus on how that catch advice should be applied in management. The PDT discussed how the Ismooth approach uses the latest trend in the trawl survey; essentially, if the survey index is trending up for example, then allowable catch can increase. However, both the northern and southern monkfish survey indices are trending downward.

The PDT then reviewed the history of prior assessments, the NEFMC's Risk Policy, and how assessment outcomes have been used to develop specifications. Because the last three monkfish assessments (2016, 2019, 2022) have determined that the stock status is unknown, the PDT determined that it is impossible to calculate OFLs. The PDT agreed that use of OFLs based on the 2013 assessment is not appropriate, as the method used for that assessment was later determined to have failed. The PDT thus agreed that the OFL should be undetermined. It was noted that the modeling work led by the Northeast Fisheries Science Center determined that the Ismooth method for developing catch advice, in the face of multiple

uncertainties, was good at promoting long-term stability of biomass and catch and likely to provide catch advice that prevents overfishing.

The PDT then calculated ABCs per the Ismooth method (trawl survey multiplier * recent catch = ABC). Several PDT members were concerned about basing the next ABCs off the current ABCs. Like the above rationale for OFL, the premise for the current ABCs was the 2013 assessment that was rejected in 2016. Also, the current ABC in the south is higher than in the north, and some indicators are suggesting (e.g., chainsweep study) that biomass is lower in the south relative to the north. The PDT discussed much of the data in the assessment, and while there are some uncertainties that the PDT was optimistic about, the only indicator that has been accepted through the last three assessment peer reviews is use of the trawl survey index using the Ismooth method. The PDT discussed the potential ABCs using the Ismooth method and other potential approaches (e.g., phasing in ABCs over time, varying approaches by area). Staff will update the NEFMC and MAFMC on assessment outcomes and likely ABCs.

The PDT sub-group on developing methods for setting the discard deduction from the annual catch target reported progress on completing an analysis of the current and four alternate discard deduction methods. PDT members provided input on refining the analysis and developed a preliminary recommendation to change the method to using the most recent 10 years of discards for setting the deduction. The PDT discussed the importance of setting the deduction accurately, so there is neither substantial catch overages or allowable catch left unharvested.

The PDT then discussed the Committee's tasking to develop effort control alternatives that would help keep the fishery within updated catch limits. The PDT recommended removing certain alternatives that are focused on increasing effort. The PDT was concerned about the potential of just turning potential landings into discards; focusing on measures that reduce the number of trips taken may have more impact on reducing catch than measures that decrease landing limits. Staff will bring this input to the Councils. The PDT also discussed the challenges with querying data and developed solutions.

October 18

With the draft assessment peer review report available, the PDT finalized its memo to the SSC regarding 2023-2025 OFLs and ABCs. Having already agreed to recommend that OFL be undetermined, the PDT focused on the ABCs. The PDT discussed how it is the general practice of PDTs to present ABCs to the SSC that are consistent with the assessment and/or control rule methods. Due to the lack of an analytical assessment, the parameters needed to apply the monkfish ABC control rule are not available, so use of the ABC control rule is impossible. The PDT forwarded the ABC values calculated from the Ismooth approach as it has been presented in the past three assessments and accepted via peer review except in the latest, in which the reviewers did not reach consensus on how catch advice should be applied. For SSC discussion, the PDT prepared ABCs based on both recent catch and ABCs, because a minority of reviewers supported consideration of applying the multiplier to recent ABC. The PDT agreed to recommend against basing FY 2023-2025 ABCs off recent ABCs but did not reach explicit consensus on recommending the Ismooth approach because of several concerns about relying in the Ismooth approach (reasons detailed in the October 18 PDT summary). Reasons for not basing future ABCs off current ABCs included that current ABCs stem from an analytical assessment method that was invalidated in 2016 and that used a previous timeseries of discard data with errors and assumptions that were updated in the 2022 assessment.

The PDT also finalized its memo to the SSC on discard deduction approaches, including an analysis of how use of the Ismooth approach for setting ABCs would impact the discard deduction and total allowable landings..

November 2

With the SSC's recommendations for the OFLs and ABCs, the PDT worked to finalize alternatives and impacts analysis for review by the AP, Committee and Councils, aiming to finish documents by

November 21. The PDT focused on developing effort control alternatives, noting the Committee task to develop alternatives that would keep catch within the ACLs and that most of the recent landings in the northern area are coming from groundfish trips that are not using monkfish DAS, landing incidental amounts of monkfish. The PDT is concerned that the effort controls in the Monkfish FMP (monkfish DAS and possession limits) have limited impact on controlling monkfish landings or discards, especially in the Northern area. A member of the public was concerned about the lack of a good assessment model and suggested developing seasonal closures to control catch. The PDT noted that the assessment has many uncertainties. While the PDT believes that seasonal closures could impact catch, the PDT decided there is insufficient time to develop such an idea in Framework 13, noting this idea has not been discussed by the Committee. The PDT agreed to develop alternatives that would make DAS allocations distinct between the north and south, and options for reducing DAS in each area. The PDT discussed the incidental monkfish trips in the north and decided to develop alternatives that would adjust them. With each of these options, there was concern about the possibility of just turning landings into discards rather than reducing overall catch.

DRAFT 2023 COUNCIL MANAGEMENT PRIORITIES REGARDING MONKFISH

On November 2, the PDT reviewed the recommendations made thus far by the PDT, Advisory Panel, and Committee about 2023 work priorities and developed final comments for the Committee to consider. The PDT commented on the following potential priorities from the August 30 Committee meeting:

1. "Review recommendations from the Research-Set-Aside (RSA) program review and develop improvements to the Monkfish RSA program. Consider use of RSA DAS and whether additional flexibility is warranted (e.g., flip to a directed RSA DAS while at sea)."

The PDT supports having a functional RSA program. Given concerns about future reductions in catch limits, this is not the time to implement revisions to the RSA program that would increase participation. The PDT supports having a discussion to help prepare for future program revisions, but this is a lower priority now relative to others on this list. This could be combined with priority #3, as a workgroup could be convened to have these discussions.

2. Address monkfish recommendations in the NOAA Fisheries *Action Plan to Reduce Atlantic Sturgeon Bycatch in Federal Large Mesh Gillnet Fisheries*.

This is a required action, but the PDT suggests developing this action as an omnibus in collaboration with other FMPs and perhaps the MAFMC.

3. Form a work group of fishermen, NOAA and Council staff, Monkfish Committee members, etc. to discuss the Monkfish RSA program and identify potential improvements.

The PDT suggests combining this with priority #1.

4. Address latent effort in the fishery; consider 1) developing a DAS leasing program that would allow markets to drive DAS availability and cost, or 2) moving to a quota management program to increase profitability, flexibility, and efficiency (eliminate the DAS program). Consider updating the control date that was established in May 2012 during development of Amendment 6.

The PDT notes that the number of active permits in the monkfish fishery has been on a consistent, downward trend for some time (see performance report). The PDT generally supports considering other management approaches to increase the options for how management can respond to changes in catch limits.

5. Develop a model that would help predict how changing effort controls would impact the monkfish fishery.

In developing Framework Adjustment 13 analysis, the PDT was limited in accurately estimating how the fishery may respond to changing effort controls. There is likely enough fishery data to support developing a model to better predict fishery responses to various management measures, but insufficient time to create and evaluate such a model within either the specification timeline (or workload limitations of PDT members). Such a model could help the Councils evaluate whether the current management system (i.e., reliance on monkfish DAS and possession limits) provides sufficient flexibility to adjust the directed, incidental, and discard fisheries to changing quotas.

6. Develop an economic analysis of the monkfish fishery to help understand the fishery and the outcomes of potential management actions, include further defining the distinctions between the northern and southern fisheries.

The PDT recommends combining this with priority #5.

7. Update AP-PDT monkfish fishery performance report.

The PDT indicated that having an annual update of fishery data and a check-in with the AP on fishery performance would help the PDT fulfill the regulatory requirement of the NEFMC and MAFMC to annually monitor the status of the monkfish fishery and resource (50 CFR 648.96(a)). The PDT expects that future reports would take less time to prepare, as much of the time spent this year was on determining the content and organization of the report. There is now a template to base future reports on.

Additionally, the PDT recommends adding a priority:

8. Evaluate whether the current management system (i.e., reliance on monkfish DAS and possession limits to control catch) provides sufficient flexibility to adjust the directed, incidental, and discard fisheries to changing quotas.

#3

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

DATE: November 21, 2022

TO: Tom Nies, Executive Director

FROM: Scientific and Statistical Committee (SSC)

SUBJECT: **Terms of Reference – Overfishing levels (OFLs), acceptable biological catches (ABC), and discard deduction approach for monkfish, 2023 through 2025**

The SSC met on October 26, 2022, in Boston, MA to address the following Terms of Reference (TORs):

Overfishing Limits and Acceptable Biological Catches TORs

1. Review information from the September 2022 management track assessment for monkfish and provided by the Monkfish Plan Development Team (PDT).
2. Comment on the conclusion of the assessment and peer review that the stock status of monkfish is unknown and the applicability of the NOAA Fisheries *Procedural Guidance for Changing Assessed Stock Status from Known to Unknown*.
3. Recommend overfishing limits (OFLs) and acceptable biological catches (ABCs) for monkfish in both the northern and southern management areas for fishing years (FY) 2023-2025 that will prevent overfishing, meet the objectives of the fishery management plan, and consider the Council's Risk Policy Statement.

Discard Deduction Approach TORs

1. Review analyses provided by the Monkfish PDT of alternate approaches for setting the discard deduction from the annual catch target when setting specifications.
2. Recommend an approach for setting the discard deduction, commenting on the PDT's recommendations.

To address these TORs, the SSC considered the following information:

Information

1. 2022 Management Track Assessment of Monkfish
    a. NEFSC staff presentation
    b. Stock assessment report
    c. Peer review report
2. Presentation: Monkfish PDT report (NEFMC staff)
3. Memo from Monkfish PDT to SSC re OFLs and ABCs FY 2023-2025, October 19, 2022
4. NEFMC Risk Policy
    a. Risk Policy Matrix for Monkfish
    b. NEFMC Risk Policy Road Map
5. NOAA Fisheries Procedural Guidance for Changing Assessed Stock Status from Known to Unknown
6. Memo from SSC to Council re OFLs and ABCs for FY 2020-2022

7. Discard deduction approaches
    a. Memo from Monkfish PDT to SCC re discard deduction approaches, October 19, 2022
    b. O'Keefe C. (2020). Evaluation of Methods to Estimate Monkfish Discards for Calculating Total Allowable Landings. Fishery Applications Consulting Team LLC with support from the New England Fishery Management Council. 32 p.
    c. O'Keefe C. (2021). 2021 Evaluation of Monkfish Discard Estimation for Calculating Total Allowable Landings. Fishery Applications Consulting Team LLC with support from the New England Fishery Management Council. 19 p.
8. Background Information
    a. 2022 Monkfish Fishery Performance Report
    b. NOAA/NEFSC. 2022 State of the Ecosystem Reports. Available at: https://www.fisheries.noaa

SSC members in attendance
Mike Carroll, Jeremy Collie, Yong Chen, Kevin Friedland, Adrian Jordaan, Lisa Kerr, Conor McManus, Jason McNamee, Richard Merrick, Cate O'Keefe, Terry Stockwell, Sam Truesdell, John Wiedenmann, Lindsey Williams

TERMS OF REFERENCE – Overfishing Limits and Acceptable Biological Catches

1. *Review information from the September 2022 management track assessment for monkfish and provided by the Monkfish Plan Development Team (PDT).*

Presentations from Northeast Fisheries Science Center (NEFSC) staff and the Monkfish Plan Development Team (PDT) were provided to the SSC regarding the recent management track assessment for monkfish. The management track assessment changed the method for calculating discards, reinserted discard records that had been manually deleted, and reduced the discard mortality rate in the scallop fishery from 100% to 64% based on recently published literature[1]. The assessment applies the ISmooth approach (formerly referred to as PlanBSmooth) to estimate a direction and rate of change in NEFSC survey indices that forms the basis for catch advice.

The SSC recommends continued use of the Ismooth index-based assessment as the basis for catch advice for monkfish in both the Northern and Southern Management Areas.

2. *Comment on the conclusion of the assessment and peer review that the stock status of monkfish is unknown and the applicability of the NOAA Fisheries Procedural Guidance for Changing Assessed Stock Status from Known to Unknown.*

The Ismooth index-based approach precludes formal estimation of reference points and stock status for monkfish in both Management Areas. The 2022 Management Track peer review panel recommended listing stock status as unknown. The SSC reviewed the NOAA Fisheries Procedural Guidance for changing status from known to unknown and commented that monkfish stock status be switched to unknown based on the time since the index-based method was introduced (Criterion B, Aging Stock Assessment) and because of short-comings of the previous analytic assessment (Criterion C3, Reject New Assessment, Flawed Previous Model).

[1] Weissman, A., Knotek, R., Mandelman, J., Rudders, D., Roman, S., and Sulikowski, J. 2021. Determining discard mortality of monkfish in a sea scallop dredge fishery. North American Journal of Fisheries Management 41: 856-870.

The SSC concurs with the conclusion that monkfish stock status is presently unknown given problems identified with the previously rejected length-based assessment and the time elapsed since the last analytical assessment in 2016.

3. *Recommend overfishing limits (OFLs) and acceptable biological catches (ABCs) for monkfish in both the northern and southern management areas for fishing years (FY) 2023-2025 that will prevent overfishing, meet the objectives of the fishery management plan, and consider the Council's Risk Policy Statement.*

The SSC recommends OFL be unknown for the Northern and Southern Management Areas for FY 2023-2025, and ABCs of 5,526 mt for the Northern Management Area and 3,766 mt for the Southern Management Area to be held constant for FY 2023-2025.

The unknown OFL advice is based on the absence of analytical assessments and biological reference points for monkfish, which preclude determination of OFL for either the Northern or Southern Fishery Management Areas. The ABC advice is based on applying the ISmooth multipliers to the most recent 3-year average catch to calculate the Annual Catch Targets (ACT) for the Northern and Southern management areas, the ACT is increased by the management uncertainty buffer (3% for monkfish) to calculate ABCs. The SSC noted that simulations conducted by the Index-Based Methods Working Group indicated that the ISmooth approach is expected to prevent overfishing.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

The SSC concurred with suggestions and recommendations from the 2022 Management Track assessment and Peer Review Panel that OFL for Northern and Southern monkfish is unknown. The 2022 Management Track Peer Review Panel did not provide consensus advice on whether the ISmooth multipliers should be applied to the existing ABC or to recent realized catch. The PDT highlighted that recent ABCs (since 2014) were propagated from the previous analytical assessment, which was rejected as the basis for catch advice in 2016 due to flawed ageing methods and recommended that ABCs for FY 2023-2025 should be based on applying the ISmooth multipliers to realized average catch in FY 2020-2022. The SSC noted that recent catches, managed under Total Allowable Landings (TAL), have been substantially less than the ABCs due to several factors, including discard deductions, shifts in scallop fishing effort distribution, and low prices causing uncertainty about relative stock status. They highlighted that setting ABC based on applying the ISmooth multipliers to recent realized catch can create a ratchet effect, whereby, for any given survey trend, catching less than the ABC (e.g., by reducing discards, lack of targeting due to market conditions, etc.) results in a lower ABC in subsequent years that would have resulted if the entire ABC was caught. Since discards are not allocated or controlled in the monkfish fishery, but instead deducted from the ACT, the SSC recommends that catch advice derived from the ISmooth approach corresponds more closely to the ACT than the ABC.

The SSC recommends setting Northern and Southern Management Area monkfish ABCs based on:

- ACT = ISmooth multipliers applied to most recent 3-year average catch
- ABC = ACT increased by 3% management uncertainty buffer
    - For the Northern Management Area:
        - ACT = 0.829 * 6,465 = 5,360 mt
        - ABC = 5,360 * 103% = 5,526 mt
    - For the Southern Management Area:
        - ACT = 0.646 * 5,655 = 3,653 mt
        - ABC = 3,653 * 103% = 3,766 mt

The SSC discussed how this recommended approach for monkfish, to apply the ISmooth multipliers to the ACT, differs from other SSC recommended approaches for catch advice based on PlanBSmooth assessment methods. The SSC noted that the Monkfish Fishery Management Plan (FMP) includes an ACT, which is not applied in other FMPs where the PlanBSmooth approach has been used as the basis for catch advice. The ACT is intended to account for management uncertainty in the monkfish fishery and can be adjusted by the Council. Additionally, the SSC noted that discards in the monkfish fishery are not allocated or managed under sub-Annual Catch Limits (sub-ACLs) as is done in other FMPs. The SSC's recommended reductions in ABC compared with previous levels reflect the PDT's concern about declining survey indices, particularly in the Southern Management Area. The SSC highlighted high utilization of monkfish in the Northern Management Area relative to TALs with historically lower discard rates. The SSC noted that the recommended deviation in the application of the ISmooth approach may not be warranted for other stocks.

ADDITIONAL COMMENTS

The SSC discussed future needs and technical recommendations for the monkfish populations in the two management areas. The SSC recognizes that improved age and growth information for conducting analytical assessments are unlikely to be available in the foreseeable future. The SSC concurs with the 2022 Management Track Peer Review Panel that alternative assessment methods, including cohort tracking, tagging studies, delay-difference models, and catch-survey analysis, could be pursued. If successful, such methods could provide a basis for estimating reference points and stock status.

The SSC recommends consideration of additional survey indices in the assessment (i.e., shrimp and scallop survey indices), as well as further analysis of the different patterns among surveys (e.g., integration of multiple indices), including length-frequency distributions. Since the Ismooth multiplier is based on the most recent data, the Bigelow surveys could be considered as separate abundance indices. Additionally, swept-area biomass estimates for monkfish, as reported in the Management Track assessment, could be used to estimate exploitation ratios, though this approach has not been peer-reviewed.

SUMMARY OF RECOMMENDATIONS

1. **The SSC recommends that OFL be unknown for FY 2023-2025, and ABCs of 5,526 mt for the Northern Management Area and 3,766 mt for the Southern Management Area to be held constant for FY 2023-2025.**
2. **The SSC concurs with the conclusion that monkfish stock status is presently unknown given problems identified with the previously rejected length-based assessment and the time elapsed since the last analytical assessment in 2016.**
3. **The SSC recommends that alternative assessment methods for monkfish should be investigated in the next assessment iteration.**
4. **The SSC recommends consideration of additional survey indices, analyses of differences in survey indices, and swept-area biomass estimates derived from survey indices be analyzed.**

Fishing Year	Management Area	OFL (mt)	ABC (mt)
2023-2025	Northern	Unknown	5,526
2023-2025	Southern	Unknown	3,766

TERMS OF REFERENCE – Discard Deduction Approach

1. *Review analyses provided by the Monkfish PDT of alternate approaches for setting the discard deduction from the annual catch target when setting specifications.*

The SSC received a presentation from the Monkfish PDT describing analyses conducted to support consideration of an alternative discard deduction approach to set TALs. The current approach for deducting discards in the Monkfish FMP is based on the most recent 3-year discard-to-catch ratio applied to the ACT for the subsequent 3-year TAL advice. There have been variable discard rates by monkfish management area over time, and the current approach uses lagged information applied to future years. The PDT presented a range of alternative approaches to calculate discard deductions including:

- 3-year and 10-year time series
- Mean and median discard estimates
- Direct discard amounts and discards-to-catch ratios

2. *Recommend an approach for setting the discard deduction, commenting on the PDT's recommendations.*

The SSC considered the Council's goals for adjusting the discard deduction method, which included stability to the directed fishery, minimizing changes between management cycles, and accuracy of discard predictions. The PDT highlighted that overestimating discards results in lowered TALs, whereas underestimating discards risks exceeding the ACL. The SSC noted that applying a discard ratio may be more appropriate in the Northern Management Area where discards occur in the directed fishery, whereas applying a direct discard amount may be more appropriate in the Southern Management Area where discards primarily occur in other target species fisheries (e.g., scallop fishery). The PDT explained that scallop biomass has recently been shifting northward. While most of the scallop biomass on Georges Bank is still in the Southern Management Area, scallop biomass could shift further northward into areas that overlap with the monkfish Northern Management Area, which may result in increased monkfish discards from non-targeted fisheries in the future.

The SSC recommends the following approach for setting the discard deduction, which supports the PDT's recommendations:

- **Use of 10-year moving time series**
- **Use of median discards**
- **Use of direct discard amount**
- **Updates to occur every 3 years**

SUMMARY OF RECOMMENDATIONS

1. **The SSC recommends that Alternative 5 from the Monkfish PDT Memo be used for setting the discard deduction for both the Northern and Southern Management Areas:**
    a. **Latest 10-year median of discards**
2. **The SSC recommends analysis of a recruitment index as a predictor for future discards.**
3. **The SSC recommends further evaluation of the accuracy of discard information from fisheries that catch monkfish, including both targeted and bycatch fisheries.**

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50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

MEMORANDUM – TYPO CORRECTED

(Revised December 1, 2022, with a minor typo correction on page 5.)

DATE: October 19, 2022

TO: Scientific and Statistical Committee

FROM: Monkfish Plan Development Team

SUBJECT: **Monkfish specifications for FY 2023 - 2025**

This memorandum forwards information to support recommendations by the Scientific and Statistical Committee for setting the Overfishing Limit and Acceptable Biological Catch (ABC) for the Monkfish Northern Fishery Management Area (NFMA) and Southern Fishery Management Area (SFMA) for Fishing Years (FY) 2023 - 2025. The Monkfish Plan Development Team (PDT) met by webinar on September 27 and October 18, 2022, to develop this memo.

1. OVERVIEW

Monkfish has been assessed and managed in two areas, northern and southern. This memorandum provides information to support OFL and ABC recommendations for FY 2023 – 2025 by the Scientific and Statistical Committee (SSC). To develop recommendations, the PDT reviewed 2016, 2019, and 2022 stock assessments and peer review reports, SSC reports, PDT reports, and survey information. The 2022 management track assessment for monkfish was peer reviewed on September 20 and 22, 2022.

The monkfish regulations state: "The Councils or the PDT shall calculate ABC values for each monkfish stock based on the ABC control rule established in the FMP. These calculations shall be reviewed by the SSC, guided by terms of reference developed by the Councils. The SSC shall either concur with these ABC calculations, or provide alternative recommendations for each stock and describe the elements of scientific uncertainty used to develop its recommendations." Failure of the monkfish analytical assessment in 2016 has precluded use of the existing control rule, and index-based assessments have been used to provide catch advice on an interim basis. However, ABC setting has not followed a clear and consistent method. Two ABC approaches are included in this memo; one is consistent with the catch-setting method identified in the 2016, 2019 and 2022 assessments and an alternate approach that was discussed during the 2022 peer review.

Section 2 of this memo provides a history of prior assessments and catch setting. Section 3 summarizes the 2022 assessment. Section 4 provides potential OFLs and ABCs for SSC consideration. Responses to the SSC recommendations made in 2019 during FY 2020-2022 specifications setting are in Section 5. Refer to the 2022 assessment report (Deroba 2022), the fishery performance report (NEFMC 2022), and the PDT memo on setting the discard deduction for other supporting information.

Key Points:

- The PDT recommends that the OFLs for the northern and southern monkfish management areas be undetermined.
- The PDT provides ABCs calculated using the Ismooth approach and using recent ABCs, but recommends against the latter approach.

2. PRIOR STOCK ASSESSMENTS AND SPECIFICATION SETTING

The term "PlanBsmooth" (now called "Ismooth") has been used to describe the index-based assessment method and it has been equated with the method used for Georges Bank cod since 2015. However, the terms "PlanBsmooth" and the "GB cod method" have been used to describe multiple specific methods for catch setting over the years between assessment teams, the PDT, and the SSC. This section attempts to clarify some of that history.

FY 2011-2013

PDT, SSC, Council: Amendment 5 to the Monkfish FMP, implemented in 2011, revised methods to derive the monkfish OFLs and ABCs and set specifications for FY 2011-2013 using these methods and the SARC 50 assessment (in 2011). Amendment 5 also described the following control rules:

$$OFL = \text{exploitable biomass } (B_{current}) * \text{the fishing mortality threshold } (F_{max})$$

$$ABC = \text{exploitable biomass } (B_{current}) * \text{average exploitation rate}$$

The average exploitation rate were periods of increasing biomass, 1999-2006 in the North and 2002-2009 in the South. Since 2010, the SSC has considered these control rules interim proxies until more precise aging methods can be incorporated into the assessment. *"…considerable uncertainties in the assessment model preclude its use to determine probability of exceeding the projected Overfishing Level of catch"* (SSC report to Council, 2010).

Through Amendment 5, the Council recommend OFLs be set for FY2011-2013 at 22,729 mt in the north and 28,263 mt in south and ABCs at 17,485 mt in north and 13,326 mt in south. These ABCs were set consistent with the control rule. This was informed by the Data-Poor Working Group assessment. After the Council taking final action, the 2010 monkfish assessment (SARC 50) was finalized.

Assessment: The monkfish stock assessment in 2010 (SARC 50) was an analytical assessment that used the SCALE model (had been in use since 2007), concluding that monkfish was not overfished and overfishing was not occurring but recognized significant uncertainty in this determination.

PDT: SARC 50 resulted in needing to recalculate the FY 2011-2013 ABC specifications (using the control rule) to ABCs of 7,592 mt in the NFMA and 12,316 mt in the SFMA.

Council and NMFS: NMFS approved the recalculated ABC for the south based on the SARC, lowering the ABC from 13,326 mt to 12,316 mt, given this recalculated ABC remains higher than the previously approved ACT from A5. However, NMFS disapproved the proposed specifications for the north in Amendment 5 because the recalculated ABC from the SARC was lower than the ACT from A5, leaving status quo specifications in place. Part-way through FY 2011 via Framework 7, the Council recommended a reduction in the ACT for the north so that the recalculated ABC from the SARC was higher than the ACT and thus consistent with A5. The Council also reconfirmed the SFMA ABC from the SARC (12,316 mt). NMFS reduced northern ACT and the revised effort controls while being consistent with recent scientific advice using the SARC recalculated ABC in the north (Framework 7 Final Rule).

FY 2014-2016

Assessment: The 2013 operational assessment, that informed FY 2014-2016 specifications, also used the SCALE model and concluded that monkfish was not overfished and overfishing was not occurring.

PDT: The years in which the average exploitation rate was calculated for the ABC was updated to 2006-2011 in the North and 2002-2009 in the South.

SSC: The SSC recommended OFLs for FY 2014-2016 be lowered to 17,805 mt and 23,204 mt for the northern and southern areas, respectively, but maintain status quo ABCs (7,592 mt for north, 12,316 mt for south). These recommendations were based on seemingly conflicting considerations in stock status (e.g., monkfish was above biomass targets and stable or increasing survey trends, but continuing retrospective patterns in the stock assessment and below average recruitment) that suggest that neither drastic increases, nor decreases to existing catch levels were warranted at this time

Council: The SSC recommendations for OFL and ABC were accepted through Framework 8 (NEFMC 2014).

FY 2017-2019

Assessment: The 2016 operational assessment, that informed FY 2017-2019 specifications, did not update the SCALE model because its use was invalidated by age validation research (Richards 2016). This assessment concluded that many of the biological reference points were no longer relevant due to invalidation of the growth model (e.g., no estimation of absolute biomass, F_{max} could not be recalculated), and thus were not updated. Stock status was determined to be unknown. A strong 2015-year class was identified in both the survey and the discard data The review panel for the assessment concluded that using a survey index-based method for developing catch advice was appropriate. For providing catch advice, a method called "PlanBsmooth" or the "Georges Bank cod method" was used that set catch advice based on the recent trend in NEFSC trawl survey index. This method calculates the proportional rate of change in smoothed survey indices (average of fall and spring NEFSC surveys) over the most recent three years. This rate is the slope of the regression which is then multiplied by the most recent three years average of fishery catch to determine catch advice (Equation 1):

*Equation 1: Trawl survey multiplier * latest 3-year average catch = catch advice*

Peer Review: This method was accepted during the assessment peer review. The multipliers were 102% in the NFMA and 87% in the SFMA.

PDT: The PDT then recommended status quo OFLs and ABCs for both management areas for a few reasons: the confidence intervals were overlapping (1.0-1.3 in north, 0.76-1.0 in south), catch had been below the TAL in recent years, the expectation that the 2015-year class would enter the fishery during the specification years, and status quo had not resulted in overfishing in prior years.

The PDT had not reached consensus on how the survey trend adjustment should be applied. In case the SSC did not agree with the PDT's status quo recommendation, the PDT prepared candidate ABCs using Equations 2-4 below, calling Equation 2 the "Georges Bank cod strategy" (GB cod method):

*Equation 2: Trawl survey multiplier * latest 3-year average catch = OFL; ABC = 0.75*OFL*

*Equation 3: Trawl survey multiplier * latest ABC = ABC*

*Equation 4: Trawl survey multiplier * latest ACT = ABC*

SSC: However, the SSC agreed with the PDT and recommended status quo OFLs and ABCs; the Council recommended and NOAA Fisheries approved status quo (ABCs were 7,592 mt in NFMA, 12,316 in SFMA).

FY 2020-2022

Assessment: The 2019 assessment, that informed FY 2020-2022 specifications, continued use of the PlanBsmooth method due to ongoing uncertainties (described above). The assessment continued to see a strong recruitment event from 2015 that led to an increase in biomass in 2016-2018, though abundance declined in 2019 as recruitment returned to average levels (NEFSC 2020). PlanBsmooth was described in the assessment report as Equation 1 (above). The assessment multipliers were 1.0 in the south and 1.2 in the north.

Peer Review: The peer review was presented with the PlanBsmooth method as Equation 1 and did not refute its use in the peer review report.

PDT: The PDT, with input by the NEFSC, recommended status quo OFLs and developed ABCs using Equation 3 (above) and called it the PlanBsmooth method and the GB cod method. The PDT recommended status quo ABC in the south (12,316 mt) and a 10% increase in the north (8,351 mt), which was more cautionary than the result of using Equation 3 (20% increase).

SSC: The SSC then recommended that the OFLs could not be determined because "analytical assessments are not available from which to estimate stock status criteria and biological reference points." The SSC

further concluded that the "current ABC control rule" (likely referring to the rule approved through Amendment 5, p. 2 of this memo) could not be used as a basis for making an ABC recommendation. The SSC approved the PDT recommendations for ABCs (Equation 3) and called it the GB cod strategy.

The Council recommended, and NMFS adopted, the ABCs as recommended by the PDT and SSC. However, the Council recommended, and NMFS adopted, status quo OFLs (17,805 mt for NFMA and 23,204 mt for SFMA). At the time, the advice from the NEFSC was to not officially change stock status to unknown or OFLs to undetermined after a failed analytical assessment. At the time, there was a national-level NOAA Fisheries working group that was developing a policy to ensure more consistency for determining when stock status should change from known to unknown. The *Procedural Guidance for Changing Assessed Stock Status from Known to Unknown* stemming from that work became effective in November 2020.

3. 2022 MANAGEMENT TRACK ASSESSMENT

Assessment: The 2022 management track assessment did not include an analytical assessment that could determine absolute biomass or fishing mortality. The PlanBsmooth method was again used to develop catch advice, though the name has been changed to "Ismooth" to distinguish from other "Plan B" approaches. Like the 2016 and 2019 assessments, this assessment concluded that the status of monkfish remains unknown. The Ismooth method for setting catch advice was again described as Equation 1 (above), the survey multiplier applied to recent catch. The multipliers were 0.829 for NFMA; 0.646 for SFMA. The fishery catch time series was updated, including a new discard mortality rate for scallop dredges (reduced to 64% from 100%) and data corrections were made.

Peer Review: The 2022 assessment was peer reviewed on September 20, 2022, and the final peer review report was available to the PDT on October 7. The peer review agreed with the unknown status determination and the updates to the catch time series. The peer review did not reach consensus on whether catch advice should by applying the multiplier to recent catch or to recent ABC (Equation 1 vs. 3), though most of the peer reviewers supported applying it to recent catch.

The PDT notes a factual error in the peer review report. The report states:

> *"The Panel spent considerable time discussing the appropriate term which the multiplier should be applied against – ABC or catch. The former has been the practice since the Ismooth approach was first applied to monkfish and moving to catch would result in a major shift in catch advice. Applying the multiplier against the catch would result in a significant decrease in ABC advice."*

The Ismooth approach was first applied to monkfish during the 2016 assessment, but the PDT and SSC then recommended status quo OFLs and ABCs for both management areas for FY 2017-2019 (Section 2). The use of Equation 3 (multiplier * ABC) was not used at that time. In 2019, the PDT used a revised version of Equation 3, recommending a lower multiplier in the north than the assessment called for (1.1 vs 1.2), and that revised version of Equation 3 was recommended by the SSC. Thus, use of ABC (Equation 3) has not been the practice Ismooth was first used in the assessment. The PDT notes that either approach would result in a "significant decrease in catch advice" from FY 2020-2022 levels, though more so with using recent catch.

4. FY 2023-2025 OFL AND ABC

Overfishing Limit

The PDT recommends that the OFLs for the northern and southern monkfish management areas be undetermined (Table 1). The lack of an analytical assessment in 2022 precluded the estimation of absolute biomass and a fishing mortality rate. An OFL cannot be calculated without these parameters. This differs from the status quo OFLs. The PDT feels that having undetermined OFLs is more consistent with the unknown stock status conclusion and that the status quo OFLs are based on an analytical assessment that was invalidated in 2016.

Table 1. Potential monkfish FY 2023-2025 OFLs for SSC consideration.

Management Area	Status Quo OFL	PDT recommended OFL
Northern	17,805 mt	undetermined
Southern	23,204 mt	undetermined

Acceptable Biological Catch

It is the general practice of PDTs to focus on forwarding ABCs to the SSC that are consistent with the assessment and/or control rule methods. Due to the lack of an analytical assessment, the parameters needed to apply the monkfish ABC control rule are not available, so use of the ABC control rule is not possible. The PDT forwards the Ismooth approach (Equation 1) as it has been presented in the past three assessments and accepted via peer review except in the latest, in which the reviewers did not reach consensus. For SSC discussion, the PDT also prepared ABCs based on recent ABCs (Equation 3), because a minority of reviewers supported consideration of applying the multiplier to recent ABC.

Ismooth approach: As presented in the assessment, the Ismooth approach (Equation 1) applies the multiplier to recent catch. Fishery catch data was used as updated in the 2022 assessment (e.g., corrections to the discard timeseries, use of 64% discard mortality for scallop dredges). The average catch over CY 2019-2021 was 6,465 mt in the NFMA and 5,655 mt in the SFMA. Use of Equation 1 results in the following ABCs for FY 2023-2025:

North: 0.829 * 6,465[1] mt = 5,360 mt

South: 0.646 * 5,655 mt = 3,653 mt

Recent ABC approach: The 2022 assessment peer review did not reach consensus on the use of the Ismooth approach for these specifications; a minority of reviewers supported consideration of applying the multiplier to recent ABC (Equation 3). The most recent ABCs are for FY 2020-2022: 8,098 mt in the NFMA and 12,316 mt in the SFMA (Table 2, p. 10). Use of Equation 3 results in the following ABCs for FY 2023-2025:

North: 0.829 * 8,098 mt = 6,713 mt

South: 0.646 * 12,316 mt = 7,956 mt

PDT consensus statement: The PDT recommends against basing FY 2023-2025 ABCs off recent ABCs. (use of Equation 3). The ABCs set for the last two specification cycles stem from an analytical assessment that was invalidated in 2016. Also, these ABCs were set using a previous timeseries of discard data with errors and assumptions that were updated in the 2022 assessment.

[1] The memo presented to the SSC on October 26 had a typo in the Northern catch. The correct catch is 6,465 mt, not 6,425. The product of this equation (5,360 mt) was correct in the memo when it was presented.

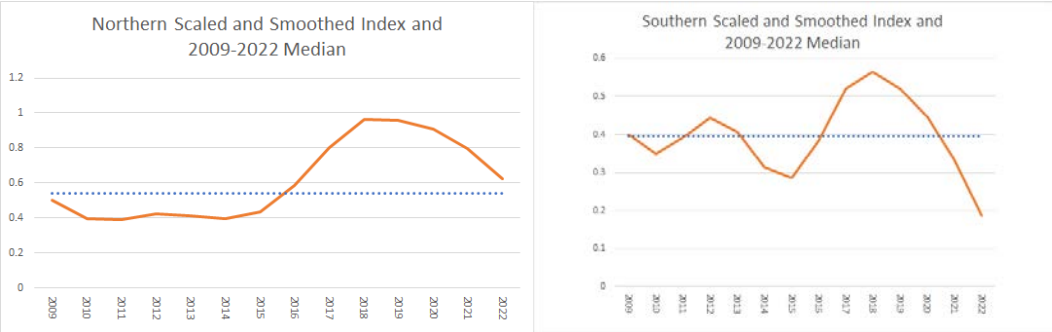
Additional discussion: In compliance with the Magnuson-Stevens Act, ABCs need to be set at levels that prevent overfishing and prevent a stock from becoming overfished, and the PDT concluded that use of the Ismooth approach would likely accomplish that outcome. This is particularly important in cases where the OFL is undetermined. The Index-based Methods Working Group and Legault et al. (in press) found that the Ismooth approach, in the face of multiple uncertainties, was likely to provide catch advice that prevents overfishing promotes long-term stability of catch and biomass. These peer-reviewed findings support the PDT's conclusion.

The PDT is concerned with the continued lack of an analytical assessment and, while the past three assessments provided catch advice using the Ismooth approach, some PDT members have concerns about relying on the Ismooth approach for monkfish at the current time for several reasons.

There is concern that the uncertainty conveyed in the LOESS smooth confidence intervals (Deroba 2022, Figures 25 and 26) only include the uncertainty introduced by the smoothing function and not the uncertainties in the underlying indices. These uncertainties arise primarily from tow-by-tow catch variability, survey design, and changes in gear/vessels over time - including the switch from the *RV Albatross* to the *RV Bigelow* in 2009. The *RV Bigelow* is known to catch significantly more monkfish than the *RV Albatross* (Miller *et al.* 2010).

There is also concern when considering recent trends and what the Ismooth approach would have advised at several time periods. Focusing on the *RV Bigelow* time series (2009-), the smoothed Northern index started below the 2009-2022 median, then increased, then decreased to slightly above the 2009-2022 index median, essentially ending where it began (Figure 1). The smoothed Southern index has been above or below the 2009-2022 index median five times since 2009. While the 2022 smoothed value is unusually low, the 2015 value would have looked similarly low as a terminal year without the benefit of the LOESS smoothing from subsequent years that we see now. Also, the 2018 smoothed value would have looked higher as a terminal year without the smoothing from subsequent years that we see now. If one had used the Ismooth approach in the south with 2015 or 2018 as the terminal year, Ismooth would have advised changing catches opposite of how subsequent southern area survey indices trended, and with even more impactful multipliers than would be apparent now due to the terminal year issue.

Figure 1. LOESS-smoothed applied to the survey indices (Figures 25 and 26 from 2022 monkfish assessment) for 2009-2022 with median line added



Considering the full time series of the survey index (fall survey began in 1963, spring survey began in 1968), the biomass indices suggest that biomass in the NFMA and SFMA has been low in recent years. The Ismooth method rescales the survey indices by the time series mean, so the time series has a mean of one (Deroba 2022, Figures 25 and 26). In the NFMA, the Ismooth indices themselves (not the LOESS-smooth) have been below one since 2004. In the SFMA, the indices have been below one since at least 1990.

Use of the Ismooth approach would result in an ABC that is lower in the SFMA relative to the NFMA, an outcome consistent with results of the chainsweep study. The estimates of monkfish biomass resulting from the paired tow experiments using chainsweep and rock hopper gears (hereafter chainsweep study) were provided to address TOR 2 of the assessment. The chainsweep study has not been peer reviewed for its application specifically to monkfish, and has not been previously used in an official capacity in a monkfish assessment or for providing monkfish catch advice. Acknowledging that, the chainsweep study suggests higher biomass in the NFMA relative to the SFMA. If biomass is lower in the south relative to the north, the PDT is concerned that use of Equation 3 would result in higher ABC in the south.

Considering the chainsweep study further, if the outcomes approximate biomass, the results suggest relatively low exploitation rates in the NFMA in recent years (e.g., ~80,000 mt in 2021 compared to the catch of 5,932 mt). In the SFMA, exploitation rates may be higher (e.g., ~15,000 mt in 2021 compared to the catch of 4,346 mt). This would further support having a lower ABC for the SFMA relative to the NFMA.

The PDT recognizes that the ABCs under either approach would be substantially lower for FY 2023-2025 than the ABCs for FY 2020-2022. Recent catches have been below ABCs, a function of many factors including: biomass, world fish markets that affect price, fishing costs, effort controls in the monkfish fishery, and dynamics of other fisheries that incidentally catch monkfish (see the 2022 Monkfish Fishery Performance Report for related details). Impacts on the Total Allowable Landings will also depend on the approach used to set the discard deduction from the Annual Catch Target (see PDT memo on discard deduction approaches), but because there are no management controls on discards (e.g., no sub-ACLs for discards), reductions in future catch would likely come from reduced landings, unless drivers outside of the Monkfish Fishery Management Plan reduce monkfish discards in other fisheries.

5. RESPONSES TO 2019 SSC RECOMMENDATIONS

In August 2019, when recommending OFLs and ABCs for FY 2020-2022, the SSC made several other recommendations, which the PDT responds to here:

SSC Recommendation #1: Improve "age and growth information for conducting analytical assessments in the future" to allow for formal estimation of stock status criteria and reference points.

PDT Response: Unfortunately, a successful aging technique has not been found for monkfish. Recognizing this, the 2022 assessment peer review suggested that NOAA Fisheries instead focus on tracking cohorts via modes in length frequency data, especially when a relatively large cohort is believed to be ageing through the population. The success of such an approach has not been evaluated.

SSC Recommendation #2: Investigate "the 2015 recruitment event and its effect on discards and biomass trends. If the high discard rates in the current fishery are primarily due to the 2015 cohort, it is important to understand if discarding will decline as this year class becomes fully recruited to the fishery."

PDT Response: The 2015 year-class was first seen in the 2016 assessment and was used, in part, as rationale for the conclusion that biomass was likely to increase, and both northern and southern indices approximately doubled from 2015 to 2018. However, the length data presented in the 2022 assessment indicate that the 2015 year-class did not track into the subsequent adult population. In the SFMA, discards were particularly high in 2016-2019, averaging 3,123 mt, and lowered to 2,318 mt on average in 2020-2021. In the NFMA, discards peaked in 2018-2019, averaging 1,167 mt (Deroba 2022, Table 1). This suggests that this year-class was heavily impacted by discarding, primarily in the scallop dredge fishery. The 2022 assessment peer review noted that there was a reduction in port sampling for individual lengths and age structures since 2019 and that if port sampling does not increase, then additional catch sampling should be done by observers to offset the loss in port sampling data.

The updated recruitment indices showed that recruitment in the north was high in 2020 relative to the time series (1963-2020), but not as high as the peak in 2015 (Deroba 2022, Figures 14 and 15). In the

south, 2020 recruitment was more like the long-term average. While this may be cause for optimism in the north, the PDT notes the recent history of the large 2015 year-class. Without new management measures that would prevent the incidental catch and discarding of juveniles, the PDT cautions against assumptions about recruitment into the fishery.

SSC Recommendation #2: Investigate "various alternative approaches for assessing monkfish as recommended by the peer review panel including surplus production models that incorporate process error and other data limited approaches (such as those available in the DLM toolkit and ICES assessment tools)."

PDT Response: Examining alternate assessment approaches was outside the scope of the 2022 assessment, which was a Level 2 management track assessment. The peer reviewers suggested that a delay-difference model be explored in the next research track assessment and the PDT supports this recommendation. The PDT notes that the DLM toolkit contains hundreds of alternatives and is uncertain what "ICES assessment tools" refers to specifically. The next monkfish assessment will be a management track in 2025, but a research track assessment is scheduled for 2027 in which alternate approaches can be explored.

SSC Recommendation #4: Examine "NEFSC survey abundances for monkfish during the 2020-2022 period to evaluate whether adjustments to the specifications might be needed to account for unanticipated changes in the abundance of monkfish in either of the two Management Areas. The SSC recommended that a "rumble strip" approach be developed (such as the approach used for scup) to ensure that the monkfish ABCs during the specification period are concordant with current stock abundance. The rumble-strip approach could examine various data such as survey abundance, size compositions, and fishery catch and length-frequencies to evaluate whether any unforeseen adverse changes had occurred in the monkfish populations in either of the two Management Areas. If so, a management action might be needed to be address this situation."

PDT Response:

The NEFSC did not update monkfish survey indices between the 2019 and 2022 assessments. Annual updates for monkfish are not normally done outside of assessments. Also, there was no survey in 2020 due to the pandemic and there has been staff turnover within the NEFSC Population Dynamics Branch, the Greater Atlantic Fisheries Office, and the NEFMC staff supporting the monkfish management plan.

In 2013, the Scientific Uncertainty Subcommittee of the Mid-Atlantic Fishery Management Council SSC identified "rumble strip" approaches for setting multi-year ABCs, including a review in their subsequent performance (see report). There was some development of approaches for managing scup, but these were never approved and implemented through a Council action. At the time, scup management benefited from having an assessment completed, the results of which were used. This is not an immediately applicable case study and such an idea for management of monkfish would require substantial effort to develop and implement.

6. REFERENCES

Deroba J.J. (2022). *Draft 2022 Monkfish Management Track Assessment Report*. Woods Hole, MA 31 p.

Legault C.M., J. Wiedenmann, J.J. Deroba, G. Fay, T.J. Miller, E.N. Brooks, R.J. Bell, J.A. Langan, J.M. Cournane, A.W. Jones, et al. (in press). Data rich but model resistant: An evaluation of data-limited methods to manage fisheries with failed abge-based stock assessments. *Canadian Journal of Fisheries and Aquatic Sciences.*

Miller T.J., C. Das, P.J. Politis, A.S. Miller, S.M. Lucey, C.M. Legault, R.W. Brown & P.J. Rago (2010). *Estimation of Albatross IV to Henry B. Bigelow Calibration Factors.* Woods Hole, MA: U.S. Department of Commerce. NEFSC Reference Document 10-05. 233 p. .

NEFMC (2014). *Monkfish Fishery Management Plan Framework Adjustment 8*. Newburyport, MA: New England Fishery Management Council and Mid-Atlantic Fishery Management Council in consultation with National Marine Fisheries Service. 179 p. .

NEFMC (2022). *Monkfish Fishery Performance Report*. Newburyport, MA: New England Fishery Management Council. 20 p.

NEFSC (2020). *Operational Assessment of the Black Sea Bass, Scup, Bluefish, and Monkfish Stocks, Updated through 2018*. Woods Hole, MA: U.S. Department of Commerce. NEFSC Reference Document 20-01. 160 p.

Richards R.A. (2016). *2016 Monkfish Operational Assessment*. Woods Hole, MA: U.S. Department of Commerce. NEFSC Reference Document 16-09. 109 p.

Table 2. Monkfish specifications and fishery performance, 2011-2022

	Year	Fishing Year Specifications (May 1 – Apr 30)					Calendar Year Assessment Data			% ABC Caught	% ACT Caught	% TAL Landed
		OFL	ABC=ACL	ACT	Expected Discards	TAL	Landings	Discards	Catch			
Northern Fishery Management Area	2011	22,729	7,592	6,567	713	5,854	3,328	370	3,698	49%	56%	57%
	2012						4,081	493	4,574	60%	70%	70%
	2013						3,355	459	3,814	50%	58%	57%
	2014	17,805					3,434	484	3,918	52%	60%	59%
	2015						4,086	572	4,658	61%	71%	70%
	2016						4,723	734	5,457	72%	83%	81%
	2017			7,364	1,026	6,338	7,105	840	7,945	105%	108%	112%
	2018						6,009	1,253	7,262	96%	99%	95%
	2019						6,084	1,080	7,163	94%	97%	96%
	2020		8,351	8,101	1,477	6,624	5,587	723	6,310	76%	78%	84%
	2021						5,121	802	5,923	71%	73%	77%
	2022											
Southern Fishery Management Area	2011	28,263	13,326	11,513	2,588	8,925	5,271	1,566	6,837	51%	59%	59%
	2012						5,674	1,962	7,636	57%	66%	64%
	2013						5,207	1,372	6,579	49%	57%	58%
	2014	23,204	12,316				5,099	1,188	6,287	51%	55%	57%
	2015						4,550	919	5,468	44%	47%	51%
	2016						4,331	2,114	6,445	52%	56%	49%
	2017			11,947	2,936	9,011	3,796	3,544	7,339	60%	61%	43%
	2018						4,388	3,476	7,864	64%	66%	49%
	2019						4,373	3,358	7,732	63%	65%	49%
	2020				6,065	5,882	2,593	2,295	4,887	40%	41%	29%
	2021						2,005	2,340	4,346	35%	36%	22%
	2022											

New England
Fishery Management Council

2022 MONKFISH FISHERY PERFORMANCE REPORT

This fishery performance report provides a brief overview of the biology, stock condition, management system, and fishery performance for monkfish, with an emphasis on the last few years. This report is intended to help the Monkfish Committee, Scientific and Statistical Committee, and Councils understand the fishery and to help interpret fishery data; it may help understand trends in and relationships between landings and abundance.

The Monkfish Plan Development Team (PDT) prepared this report in collaboration with the Monkfish Advisory Panel (AP). The AP met on May 4, 2022 to review the data in this report and develop input on fishing effort, market trends, environmental changes, and other factors impacting the fishery. A few clarifications have been noted, as suggested by reviews of the PDT, Monkfish Committee, SSC, and Council staff. For more information about the monkfish fishery, visit the Monkfish Fishery Management Plan webpage of the New England Fishery Management Council (NEFMC) and the Commercial Fishing Performance Measures webpage of the Northeast Fisheries Science Center.

Key Points:

- The 2013 assessment determined that monkfish was not overfished, and overfishing was not occurring. Assessments in 2016 and 2019 could not update stock status (so considered unknown). There is substantial uncertainty regarding monkfish biomass and fishing mortality. Stock status will be reevaluated in 2022.
- The number of monkfish limited access permits has lowered over the past decade (670 to 562), about 9-20% landed ≥ 10,000 lb of monkfish each year.
- There is a substantial amount of latent effort in the fishery; the number of monkfish Days-At-Sea (DAS) used is far below the DAS allocated.
- Recent discards as percent of catch is lower in the north (9-26%) vs. the south (36-62%).
- Advisors feel low monkfish prices have been the main limiter of the fishery. Costs are increasing and wages are not competitive with shoreside employers.
- There is substantial concern about the impacts of offshore energy development and potential restrictions regarding protected species.
- Advisors would like more flexibility to fish more efficiently than current effort controls allow.

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BASIC BIOLOGY

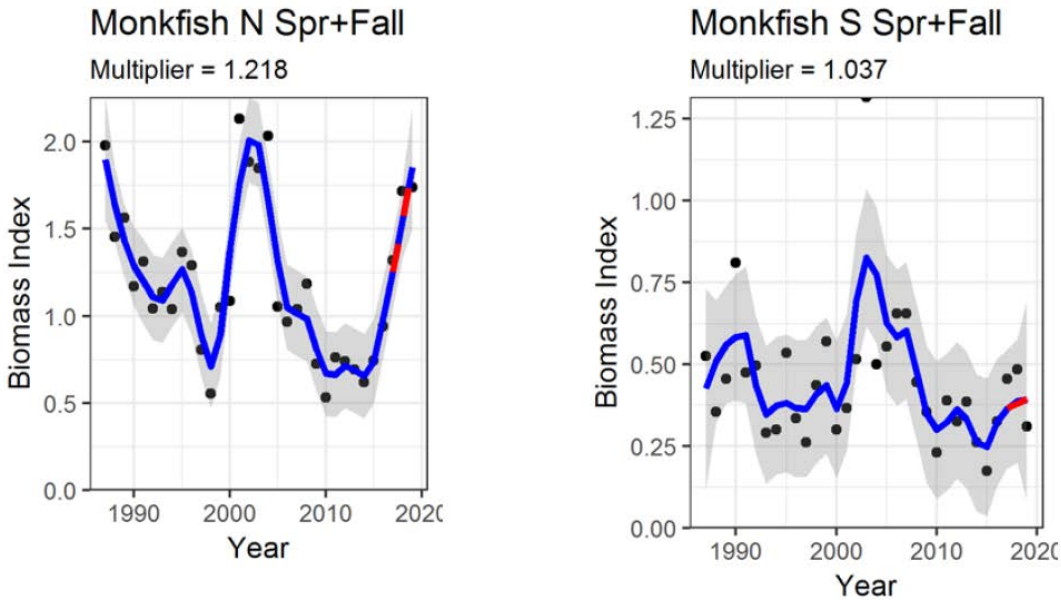
Monkfish (*Lophius americanus*), also called goosefish, occur in the Northwest Atlantic Ocean from the Grand Banks and northern Gulf of St. Lawrence south to Cape Hatteras, North Carolina (Collette & Klein-MacPhee 2002). Seasonal onshore-offshore migrations occur (from inshore areas to depths of at least 900 m) and appear to be related to spawning and possibly food availability (Richards *et al.* 2008). Stock structure is not well understood, but two assessment and management areas for monkfish, northern and southern, were defined in 1999 through the original Fishery Management Plan based on patterns of recruitment and growth and differences in how the fisheries are prosecuted (NEFSC 2020).

STATUS OF THE STOCKS

An overfishing limit (OFL) for each the northern and southern monkfish stocks has been defined as the product of the fishing mortality threshold (F_{max}) and the current estimate of exploitable biomass ($B_{current}$). The stock assessments in 2010 and 2013 concluded that the northern and southern monkfish stocks were not overfished, and overfishing was not occurring but recognized substantial uncertainty in this determination. After the 2013 assessment, the OFLs were lowered for FY 2014-2016 to 17,805 mt and 23,204 mt for the northern and southern stocks, respectively.

The stock assessments in 2016 and 2019 did not update the growth model that had been used since 2007 to assess the monkfish stocks after its use was rejected by age validation research in 2016. Instead, the stocks were assessed using the "Plan Bsmooth" method. These assessments concluded that many of the biological reference points were no longer appropriate due to invalidation of the growth model, and thus were not updated. Stock status has been unknown since 2016 and the OFLs have remained at the levels set for FY 2014. The 2019 assessment determined that a strong recruitment event in 2015 led to an increase in biomass in 2016-2018 (Figure 1), though abundance declined in 2019 as recruitment returned to average levels (NEFSC 2020; Richards 2016). Stock status was not updated in 2019 but will be revisited with updated data in the 2022 Monkfish Management Track Assessment, which will be peer reviewed in September 2022.

Figure 1. Results of "Plan Bsmooth" analysis from 2019 monkfish assessment (NEFSC 2020).



Note: Points are observed biomass indices, lines are loess-smoothed indices, "multiplier" is slope of log-linear regression through terminal three smoothed points. Results using spring and fall indices.

MANAGEMENT SYSTEM

The monkfish fishery in U.S. waters has been jointly managed since 1999 under the Monkfish Fishery Management Plan (FMP) by the NEFMC and the Mid-Atlantic Fishery Management Council (MAFMC), with the NEFMC having the administrative lead. The fishery extends from Maine to North Carolina out to the continental shelf margin. The fishery is managed as two separate stocks; the Northern Fishery Management Area (NFMA) covers the Gulf of Maine (GOM) and northern part of Georges Bank (GB), and the Southern Fishery Management Area (SFMA) extends from the southern flank of GB through the Mid-Atlantic Bight to North Carolina. The fishery is primarily managed with a yearly allocation of days-at-sea (DAS) and landing limits.

Specifications follow a hierarchy of an acceptable biological catch (ABC), and an annual catch limit (ACL) set equal to the ABC, an annual catch target (ACT) set equal to 97% of the ACL, and total allowable landings (TAL) set equal to the difference between the ACT and expected discards. These specifications are set for each management area to reduce the likelihood of the ACL being exceeded. The NFMA monkfish fishery is closely integrated with the Northeast multispecies fishery, and is primarily a trawl fishery, while the SFMA fishery is primarily a gillnet fishery targeting monkfish (with some vessels also landing skates). The differences between the two areas have resulted in some variations in management measures, such as landing limits and DAS restrictions.

Fishery specifications are set every three years. For FY 2020-2022, the ABC in the NFMA increased by 10% and was status quo in the SFMA relative to FY 2017-2019 (Table 1). The discard rate and expected discards for the NFMA increased modestly from the FY 2017-2019 specifications (13.9% to 18.2%), but the increase in the SFMA was more pronounced (24.6% to 50.8%). The large increase in SFMA discards is likely due to the large 2015-year class and predominantly the discards in dredge gear.

Table 1. Specifications for FY 2020-2022 (Framework 12).

	Northern FMA (mt)	Southern FMA (mt)
ABC = ACL	8,351	12,316
ACT (97% of ACL)	8,101	11,947
Expected Discards	(-18.2%) 1,477	(-50.8%) 6,065
Federal TAL (ACT – discards)	6,624	5,882

FISHERY PERFORMANCE

Permits and Vessels

The Monkfish FMP has seven types of federal permits: six categories of limited access permits (A-D, F, H) and one open access permit (E, Table 2). The number of fishing vessels with limited access monkfish permits has decreased over the past decade, from 670 to 562 (Table 3). Of those vessels, about 35-48% landed over 1 lb of monkfish each year and about 9-20% landed ≥ 10,000 lb of monkfish. Permit category C and D vessels consistently accounted for the greatest portion of vessels with monkfish permits and landing monkfish (Table 3, Table 4).

Fishery Effort

Effort controls such as possession limits and Days-at-Sea (DAS) are used to help ensure that the fishery landings remain within the TAL. Framework 10 established the possession limits and DAS allocations for FY 2017-2019, and these remain unchanged through FY 2022.

Table 2. Monkfish permit categories.

Permit Category		Description
Limited Access	A	DAS permit that *does not* also have a groundfish or scallop limited access permit (possession limits vary with permit type).
	B	
	C	DAS permit that *also* has a groundfish or scallop limited access permit (possession limits vary with permit type).
	D	
	F	Seasonal permit for the offshore monkfish fishery.
	H	DAS permit for use in the Southern Fishery Management Area *only*.
Open Access	E	Open access incidental permit.

Table 3. Fishing vessels with federal monkfish permits, with number of vessels landing over 1 lb and 10,000 lb, FY 2012-2021.

Permit Category	2012			2015			2018			2021		
	All	>1lb	>10K lb	All	>1lb	>10K lb	All	>1lb	>10K lb	All	>1lb	>10K lb
A	22	6	4	22	4	*	20	*	*	18	8	6
B	44	9	5	42	4	*	38	6	4	38	19	15
C	295	148	60	267	128	30	268	110	30	255	114	42
D	292	94	28	242	59	10	226	77	18	229	115	50
F	9	6	4	17	9	*	17	14	4	14	13	0
H	8	5	4	8	6	5	7	6	3	8	*	0
Total LA	**670**	**268**	**105**	**598**	**210**	**51**	**576**	**214**	**60**	**562**	**270**	**113**
E	1,743	338	19	1,578	247	8	1,525	247	20	1,485	176	7

Source: GARFO Permit database and DMIS as of April 2022.

Table 4. Proportion of monkfish landings by permit category to total monkfish landings in the year, FY 2012-2021.

Permit Category	2012	2015	2018	2021
A and B	15%	13%	16%	12%
C and D	75%	80%	77%	83%
F	2%	2%	1%	>1%
H	1%	1%	1%	0%
E	7%	5%	5%	4%
All	**100%**	**100%**	**100%**	**100%**
Source: GARFO Permit database and DMIS as of April 2022.				

Use of Days-At-Sea Allocated

DAS allocations have remained the same since FY 2017 (FW10). Limited access vessels are allocated 45.2 monkfish DAS per vessel per fishing year, 37 of which can be used in the Southern Fishery Management Area. An average of 575 permits were allocated DAS between FY 2019 – FY 2021, where permit categories C and D accounted for the greatest number of allocated DAS with about 10-11,000 DAS allocated for each (Table 5). There is a substantial amount of latent effort in the monkfish fishery; the number of DAS used is far below the DAS allocated. Further, the percentage of vessels that used at least one monkfish DAS varies by permit category. Of the Permit Category A and B vessels, 52-64% used at least one DAS in FY 2019-2020, but that decreased to 28-38% in FY 2021. The Category C and D vessels had more stable participation, but was generally lower, 4-18% these past three fishing years.

Table 5. Monkfish DAS usage, FY 2019 – 2021.

Permit Category	All Vessels			Vessels that used ≥ 1 DAS
	Total Vessels	DAS Allocated	DAS Used	
FY 2019				
A	21	909	385	11 (52%)
B	39	1,689	750	25 (64%)
C	273	11,821	583	24 (9%)
D	238	10,305	850	42 (18%)
FY 2020				
A	15	650	193	9 (60%)
B	37	1,602	444	23 (62%)
C	268	11,604	334	17 (6%)
D	229	9,916	490	32 (14%)
FY 2021				
A	18	779	130	5 (28%)
B	37	1,602	280	14 (38%)
C	255	11,042	177	11 (4%)
D	223	9,656	397	24 (11%)
Source: GARFO Vessel Permits and Allocation Management System (AMS) databases, accessed March 2022. *Notes:* Permit categories F and H account for a minor number of permits, DAS allocated, and DAS used, thus, are not included in table.				

Fishery Catch

Methods for Calculating Catch

Total Discards. Historically, monkfish discards have been calculated two ways: i) by GARFO following the close of the fishing year for end of year ACL accounting and ii) by NEFSC by calendar year during the assessment process. Methods for calculating discards are evolving towards a unified estimate from GARFO and the NEFSC using the Catch Accounting and Monitoring System (CAMS), but the discard data presented in this report were calculated as follows:

- For ACL accounting (Table 6), GARFO estimates discards using a Cochran discard ratio estimator with observed trips stratified by gear, mesh group, management area and half year. Discard ratios estimated from observed trips were then applied to stratified unobserved trips to estimate discards on unobserved trips. Total discards were calculated by using the estimates of observed discards on observed trips and using the calculated rate and trip K_{all} on unobserved trips. Monkfish discard mortality was assumed to be 100% across all gear types, although recent research suggests that monkfish discard mortality may be lower, at least in the scallop dredge fishery (Weissman *et al.* 2021).
- For the 2020 assessment (Figure 2), the NEFSC estimated discards by gear, half year and management area using observer data. For otter trawls and gillnets, the observed monkfish discard-per-kept-monkfish ratio is expanded to total monkfish discards. For scallop dredges and shrimp trawls, the observed monkfish discard-per-all-kept-catch ratio is expanded to total monkfish discards. Monkfish discard mortality was also assumed to be 100% across all gear types in NEFSC estimates of monkfish discards. These discard methods are being reevaluated in the 2022 assessment.

Total Landings. Total landings of monkfish were calculated by GARFO using the CFDERS dealer dataset after the close of the fishing year for both commercial and state permits.

Recreational Catch. Recreational catch was calculated from the MRIP database. Monkfish recreational discard mortality was assumed to be 100%.

Total Catch – Year-End ACL Accounting

From FY 2017-2021, the ACL was exceeded in the NFMA twice and never in the SFMA (Table 6). Commercial landings were 74-90% of total catch in the NFMA and 37-59% in the SFMA. State landings, defined as vessels that have never had a federal fishing permit (permit # = 000000), consistently make up under 0.5% of catch. Recreational catch is consistently under 5% of catch. In the NFMA, discards were 9% of catch in FY 2017 and have since fluctuated between 20-26% of catch. In the SFMA, discards were 51-58% of catch FY 2017-2019, lowered to 36% in FY 2020, but increased again to 62% in FY 2021.

Table 6. Year-end monkfish annual catch limit (ACL) accounting, FY 2017-2021.

Catch accounting element	Pounds	Metric tons	% of catch	% of ACL
FY 2017				
Northern Fishery Management Area (ACL = 7,592 mt)				
Commercial landings	15,003,103	6,805	90%	89.6%
State-permitted only vessel landings	60,031	27	0.4%	0.4%
Estimated discards	1,567,883	711	9%	9.4%
Recreational catch	11,725	5.3	0.1%	0.1%
Total Northern monkfish catch	**16,642,742**	**7,549**	**100%**	**99.4%**
Southern Fishery Management Area (ACL = 12,316 mt)				
Commercial landings	8,392,979	3,807	42%	30.9%
State-permitted only vessel landings	66,936	30	0.3%	0.2%
Estimated discards	11,531,614	5,231	58%	42.5%
Recreational catch	1,627	1	0.0%	0.0%
Total Southern monkfish catch	**19,993,156**	**9,068**	**100%**	**73.6%**
FY 2018				
Northern Fishery Management Area (ACL = 7,592 mt)				
Commercial landings	13,237,011	6,004	74%	79.1%
State-permitted only vessel landings	37,468	17	0.2%	0.2%
Estimated discards	4,666,815	2,117	26%	27.9%
Recreational catch	6,977	3	0.0%	0.0%
Total Northern monkfish catch	**17,948,271**	**8,141**	**100%**	**107.2%**
Southern Fishery Management Area (ACL = 12,316 mt)				
Commercial landings	10,133,407	4,596	45%	37.3%
State-permitted only vessel landings	64,841	29	0.3%	0.2%
Estimated discards	11,505,833	5,219	51%	42.4%
Recreational catch	742,988	337	3.3%	2.7%
Total Southern monkfish catch	**22,447,069**	**10,181**	**100%**	**82.7%**
FY 2019				
Northern Fishery Management Area (ACL = 7,592 mt)				
Commercial landings	13,673,898	6,202	79%	81.7%
State-permitted only vessel landings	16,474	7	0.1%	0.1%
Estimated discards	3,418,346	1,551	20%	20.4%
Recreational catch	164,771	75	1.0%	1.0%
Total Northern monkfish catch	**17,273,489**	**7,835**	**100%**	**103.2%**
Southern Fishery Management Area (ACL = 12,316 mt)				
Commercial landings	8,236,922	3,736	42%	30.3%
State-permitted only vessel landings	66,673	30	0.3%	0.2%
Estimated discards	11,174,259	5,069	57%	41.2%
Recreational catch	11,410	5	0.1%	0.0%

Total Southern monkfish catch	**19,489,264**	**8,840**	**100%**	**71.7%**
FY 2020				
Northern Fishery Management Area (ACL = 8,351 mt)				
Commercial landings	11,684,519	5,300	77%	63.5%
State-permitted only vessel landings	13,416	6	0.1%	0.1%
Estimated discards	3,503,282	1,589	23%	19.0%
Recreational catch	23,077	10	0.1%	0.1%
Total Northern monkfish catch	**15,224,294**	**6,905**	**100%**	**82.7%**
Southern Fishery Management Area (ACL = 12,316 mt)				
Commercial landings	4,944,794	2,243	59%	18.2%
State-permitted only vessel landings	20,749	9	0.2%	0.1%
Estimated discards	3,078,040	1,396	36%	11.3%
Recreational catch	359,987	163	4.3%	1.3%
Total Southern monkfish catch	**8,453,570**	**3,834**	**100%**	**31.1%**
FY 2021				
Northern Fishery Management Area (ACL = 8,351 mt)				
Commercial landings	11,496,640	5,215	75%	62.4%
State-permitted only vessel landings	18,511	8	0.1%	0.1%
Estimated discards	3,857,341	1,750	25%	21.0%
Recreational catch	7	0	0.0%	0.0%
Total Northern monkfish catch	**15,372,499**	**6,973**	**100%**	**83.5%**
Southern Fishery Management Area (ACL = 12,316 mt)				
Commercial landings	4,338,159	1,968	37%	16.0%
State-permitted only vessel landings	32,185	15	0.3%	0.1%
Estimated discards	7,278,106	3,301	62%	26.8%
Recreational catch	30,056	14	0.3%	0.1%
Total Southern monkfish catch	**11,678,506**	**5,298**	**100%**	**43.0%**

Notes:

- "Commercial landings" includes all monkfish landings by vessels with a permit number greater than zero and party/charter landings sold to a federal dealer.
- "State-permitted only vessel landings" are landings from vessels that never had a federal fishing permit (so the permit #=0).
- "Recreational catch" includes landings and discards from party charter vessels and private anglers, not sold to a federal dealer.

Source: Commercial fisheries dealer and Northeast Fishery Observer Program databases: FY 2017 data accessed 10/2018; FY 2018 accessed 3/2020; FY 2019 accessed 3/2021; FY 2020 accessed 4/22; FY 2021 accessed 7/2022; also Marine Recreational Information Program database.

FY 2021 Landings

For FY 2021, 79% of the TAL was landed in the northern area and 34% in the southern area (Table 7). In the northern area, monthly landings were lower in May-November 2021 relative to December-March (312-417 lb/month vs. 501-654 lb/month). Otter trawls accounted for 63% of the FY 2021 landings to date. In the southern area, monthly landings were highest in May and June 2021 (439-535 lb/month), then dropped to a low in July-November (9-59 lb/month), then have been moderate since December (117-227 lb/month).

Table 7. FY 2021 Preliminary commercial monkfish landings by stock area and gear type: May 2021 – April 2022 (landings in live weight).

	MAY - 2021	JUN - 2021	JUL - 2021	AUG - 2021	SEP - 2021	OCT - 2021	NOV - 2021	DEC - 2021	JAN - 2022	FEB - 2022	MAR - 2022	APR - 2022	May–April, FY2021		FY 2021*		FY 2020*		Fishing Year* Landings
													Metric Tons	Percent of Area	April, 21 as a % of Target TAL	Target TAL Metric Tons	April, 20 as a % of Target TAL	Target TAL Metric Tons	Metric Tons
NORTHERN	312	417	364	348	372	338	342	539	549	501	637	509	5,228	73%	79%	6,624	80%	6,624	
OTTER TRAWL	280	294	206	167	206	234	280	493	530	482	614	464	4,250	59%	64%		70%		
GILLNET	25	103	150	178	164	96	58	45	18	14	8	45	904	13%	14%		9%		
DREDGE	0	1	3	2	1	8	3	1	1	0	0	0	20	0%	0%		0%		
OTHER GEARS	7	19	5	1	1	0	1	0	0	5	15	0	54	1%	1%		1%		
SOUTHERN	535	439	59	19	9	9	24	227	117	120	236	188	1,982	27%	34%	5,882	39%	5,882	
OTTER TRAWL	26	14	7	1	5	6	11	43	36	41	42	30	262	4%	4%		7%		
GILLNET	443	342	29	8	0	1	11	153	63	62	187	150	1,449	20%	25%		29%		
DREDGE	39	30	23	10	4	2	1	11	9	4	2	7	142	2%	2%		3%		
OTHER GEARS	27	53	0	0	0	0	1	20	9	13	5	1	129	2%	2%		1%		
ALL AREAS	847	856	423	367	381	347	366	766	666	621	873	697	7,210	100%					
OTTER TRAWL	306	308	213	168	211	240	291	536	566	523	656	494	4,512	63%					
GILLNET	468	445	179	186	164	97	69	198	81	76	195	195	2,353	33%					
DREDGE	39	31	26	12	5	10	4	12	10	4	2	7	162	2%					
OTHER GEARS	34	72	5	1	1	0	2	20	9	18	20	1	183	3%					
LANDINGS - ALL AREAS																			
Fishing Year 2021	847	856	423	367	381	347	366	766	666	621	873	697	6,513						
Fishing Year 2020	815	1,096	464	413	373	459	574	596	881	570	683	681	6,924						7,605
Fishing Year 2019	1,506	1,221	786	541	505	590	558	888	1,086	1,004	720	555	9,405						9,960
Fishing Year 2018	1,423	1,215	620	531	534	767	666	1,068	998	851	1,021	1,074	9,694						10,768
Fishing Year 2017	1,067	1,153	607	654	634	953	780	1,122	1,057	1,004	607	697	9,638						10,319
Fishing Year 2016	1,417	1,069	511	420	358	447	713	887	880	912	939	1,239	8,553						9,792
Fishing Year 2015	1,256	963	590	431	389	482	578	848	594	755	992	935	7,878						8,813
Fishing Year 2014	1,313	1,149	453	415	357	463	654	900	824	395	785	1,110	7,708						8,818
Fishing Year 2013	1,232	919	522	350	412	556	745	952	630	765	756	845	7,839						8,684
Fishing Year 2012	1,574	1,266	502	394	439	672	547	806	733	530	654	988	8,116						9,104
Fishing Year 2011	1,044	1,066	542	338	385	530	809	982	867	1,000	929	1,008	8,491						9,499
Fishing Year 2010	928	839	422	306	282	350	561	643	716	712	730	830	6,488						7,318
Fishing Year 2009	1,253	1,182	647	396	331	479	554	418	753	696	644	795	7,353						8,148
Fishing Year 2008	1,641	1,359	674	537	539	665	808	812	1,084	703	634	824	9,455						10,279
Fishing Year 2007	1,413	1,206	917	776	695	934	1,163	1,314	1,088	897	737	1,090	11,140						12,230
Fishing Year 2006	1,314	1,490	1,181	909	880	1,104	1,140	1,130	967	671	951	848	11,738						12,586
Fishing Year 2005	2,040	3,040	1,862	1,487	1,343	1,100	1,616	1,413	1,523	1,143	1,309	1,313	17,876						19,189
Fishing Year 2004	1,806	1,979	1,581	1,380	1,304	1,243	1,803	1,681	1,264	1,173	1,235	1,478	16,449						17,927
Fishing Year 2003	2,681	3,199	1,913	1,746	1,420	2,253	2,823	1,907	1,976	2,386	2,172	1,797	24,475						26,273
Fishing Year 2002	1,574	2,093	1,489	1,382	1,524	1,643	1,937	2,203	2,015	1,762	2,631	1,553	20,255						21,807

Source: GARFO quota monitoring website, accessed July 2022.

Landings Relative to TAL

The NFMA has had a higher TAL and higher possession limits relative to the SFMA. Landings relative to TAL in the NFMA have been between 79-107% since FY 2016 (Table 8), which could be a combination of revised management measures (possession limits) and the large 2015-year class. The NFMA TAL was increased by 10% for FY 2020-2022 (relative to FY 2017-2019) and the individuals from the 2015-year class have grown large enough to be retained by the fishery and are less likely to be discarded because of minimum size regulations. The landings relative to TAL in the SFMA have been lower than the NFMA, between 34-51% since FY 2016.

Table 8. Recent landings (live weight, mt) in the NFMA and SFMA compared to target TAL.

Fishing Year	Northern Area			Southern Area		
	TAL (mt)	Landings (mt)	Percent of TAL achieved	TAL (mt)	Landings (mt)	Percent of TAL achieved
2014	5,854	3,403	58%	8,925	5,415	61%
2015	5,854	4,080	70%	8,825	4,733	53%
2016	5,854	5,447	93%	8,925	4,345	49%
2017	6,338	6,807	107%	9,011	3,802	42%
2018	6,338	6,168	97%	9,011	4,600	51%
2019	6,338	6,211	98%	9,011	3,785	42%
2020	6,624	5,299	80%	5,882	2,294	39%
2021	6,624	5,228	79%	5,882	1,982	34%
Source: GARFO quota monitoring data, accessed July 2022.						

Landings and Discards by Gear Type

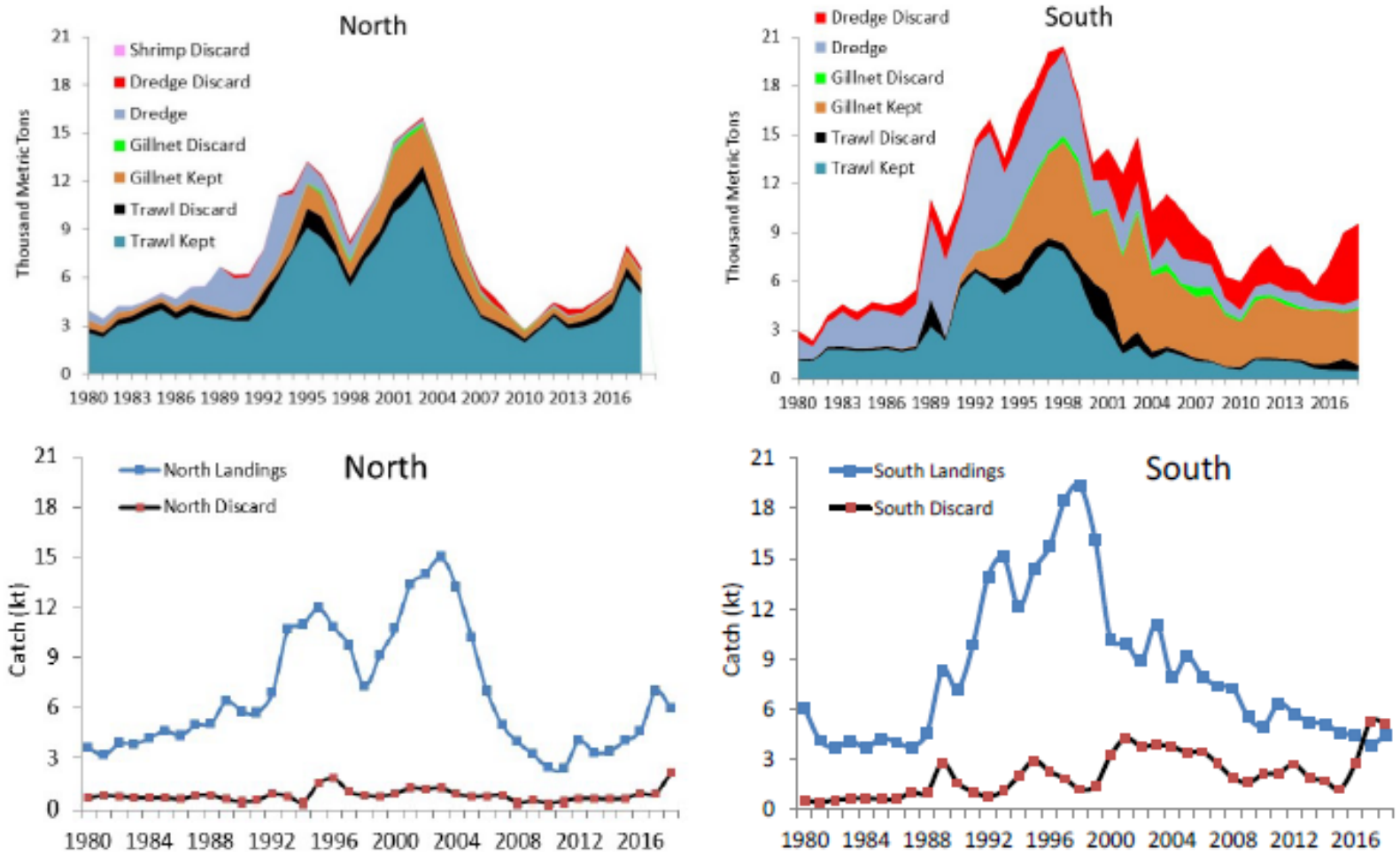
The northern and southern areas have distinctions in terms of gear type. Since at least 1980, monkfish landings in the northern area have largely been by vessels using trawls (Figure 2). In the southern area, landings were primarily by vessels using dredges and trawls from 1980 to the early 1990s.[1] Through the 1990s and to today, gillnets have been the predominant gear for vessels landing monkfish. Discards have traditionally been higher in the south relative to the north, and recently, southern discards have approximated or exceeded landings. Since FY 2018, discards in the north and south have largely been from scallop dredges, with lesser amounts by otter trawl, gillnets, and other gears (Table 9).

Table 9. Average monkfish discards by gear type, FY 2018-2021.

	Scallop Dredge	Otter Trawl	Gillnet	Other
Northern Area	52%	23%	13%	13%
Southern Area	83%	8%	3%	6%
Source: CAMS, accessed July 2022.				

[1] Monkfish Committee notes this is likely due to new monkfish possession limits intended to rebuild the southern monkfish stock that made the offshore trawl fishery less feasible.

Figure 2. Monkfish landings and discards by gear type (top panel) and total (bottom panel) for North (left) and South (right), CY 1980-2019.



Source: NEFSC (2020, Figure D5).

Revenue

Monkfish fishery revenue has generally declined in recent years, from $42.2M in CY 2005 to $10.3M in CY 2021 (Table , not adjusted for inflation). Since at least CY 2011, about half of this revenue is from trips where monkfish was over 50% of total revenue (Table 11). There is a declining number of vessels that had trips where the monkfish revenue was over 50% of total revenue, from 206 in CY 2011 to 76 in CY 2021. CY 2020 and 2021 were particularly low revenue years. Monkfish price per live pound has been on a declining trend since 2010, though prices have been increasing within the last year (Figure 3). Seasonally, prices tend to be lower in spring to summer months and higher in fall to winter.

Table 10. Total monkfish revenue, CY 2005-2021.

Calendar Year	Revenue	Calendar Year	Revenue
2005	$42.2M	2014	$18.7M
2006	$38.0M	2015	$19.1M
2007	$28.9M	2016	$20.0M
2008	$27.2M	2017	$18.4M
2009	$19.6M	2018	$14.8M
2010	$19.2M	2019	$14.5M
2011	$26.6M	2020	$9.3M
2012	$27.1M	2021	$10.3M
2013	$18.7M		

Source: ACCSP data, accessed April 2022.
Note: Revenues not adjusted for inflation.

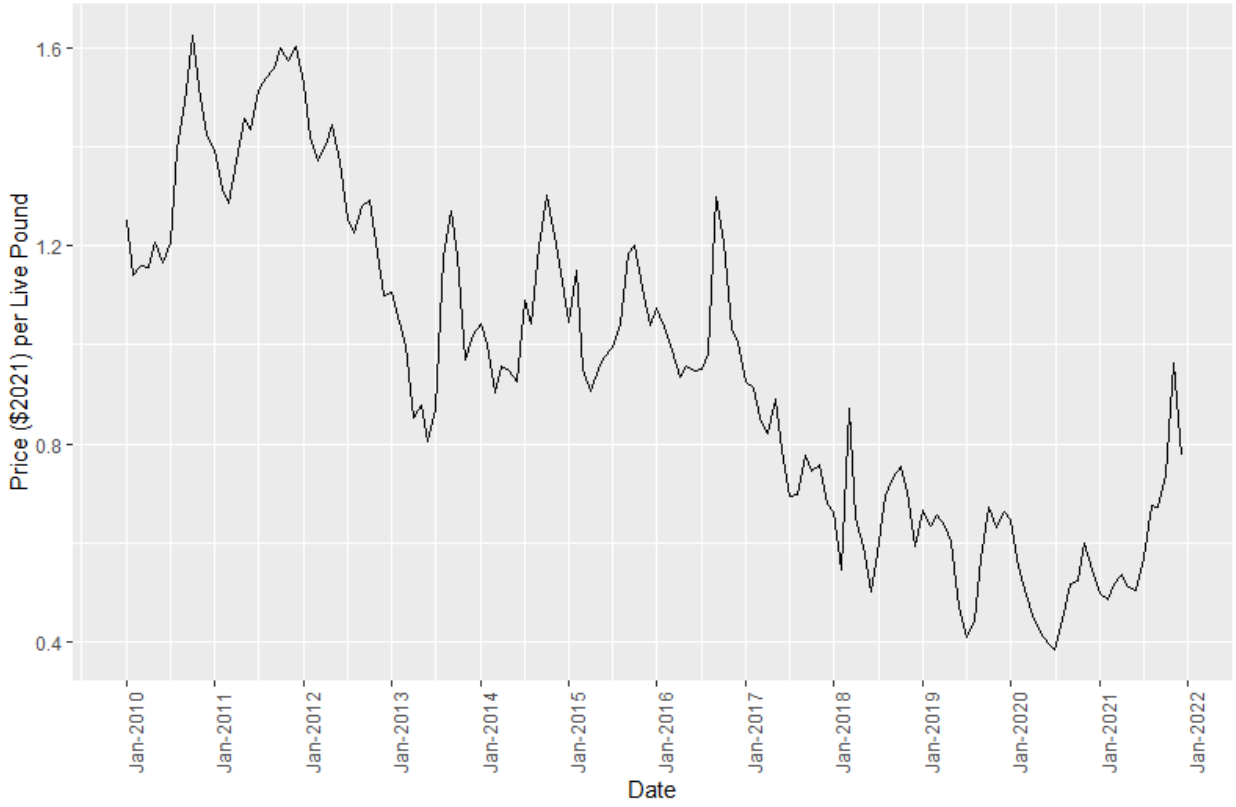
Table 11. Monkfish revenue and revenue dependence on trips where over 50% of revenue is from monkfish, CY 2011-2021.

Calendar Year	Vessels	Monkfish Revenue		Non-Monkfish Revenue		Total Revenue	% Monkfish
		Total	Per vessel	Total	Per vessel		
2011	206	$17,205,690	$83,523	$3,494,295	$16,963	$20,699,985	83%
2012	196	$15,769,087	$80,455	$3,478,988	$17,750	$19,248,075	82%
2013	164	$9,369,415	$57,131	$2,515,464	$15,338	$11,884,878	79%
2014	173	$9,695,813	$56,045	$3,169,701	$18,322	$12,865,514	75%
2015	140	$9,708,039	$69,343	$2,381,412	$17,010	$12,089,451	80%
2016	127	$10,057,253	$79,191	$2,039,105	$16,056	$12,096,359	83%
2017	135	$9,866,710	$73,087	$2,651,370	$19,640	$12,518,080	79%
2018	108	$7,293,408	$67,532	$1,730,010	$16,019	$9,023,418	81%
2019	96	$7,314,437	$76,192	$1,992,488	$20,755	$9,306,926	79%
2020	70	$2,813,271	$40,190	$1,036,824	$14,812	$3,850,094	73%
2021	76	$3,611,791	$47,524	$1,057,492	$13,914	$4,669,283	77%

Source: NEFSC SSB.
Note: Revenues adjusted to 2021 USD.

Figure 3. Monthly monkfish price per live pound ($2021), 2010-2021

Source: NEFSC SSB, July 2022.



Fishing Communities

Primary and secondary monkfish fishing ports are identified for the Monkfish FMP. Based on the criteria below, there are six primary ports in the fishery (Table 12). Of these, the highest revenue ports are New Bedford, Gloucester, and Boston, MA (Table 13). There are 14 secondary ports. The primary and secondary ports comprised 66% and 28% of total fishery revenue, respectively, during 2010-2019. There are 138 other ports that have had more minor participation (6%) in the fishery recently. More community information is available from the NEFSC Social Sciences Branch website and in Clay et al. (2007).

Primary Port Criteria. The monkfish fishery primary ports are those that are substantially engaged in the fishery. The primary ports meet at least one of the following criteria:

1. At least $1M average annual revenue of monkfish during 2010-2019, or
2. Ranking of very high (factor score ≥ 5)[2] for engagement in the monkfish fishery on average in 2016-2020, using the NOAA Fisheries Community Social Vulnerability Indicators (Table).

Secondary Port Criteria. The monkfish fishery secondary ports are involved to a lesser extent. The secondary ports meet at least one of the following criteria:

1. At least $100,000 average annual revenue of monkfish, 2010-2019, or
2. A ranking of high (factor score 1-4.99) for engagement in the monkfish fishery on average in 2016-2020, using the NOAA Fisheries Community Social Vulnerability Indicators (Table).

[2] A score of 1.0 or more places the community at 1 standard deviation above the mean.

Table 12. Primary and secondary ports in the monkfish fishery.

State	Port	Average revenue 2010-2019		Monkfish Engagement, 2016-2020		Primary/ Secondary
		>$100K	>$1M	High	Very High	
ME	Portland	√		√		Secondary
NH	Portsmouth	√		√		Secondary
MA	Gloucester		√		√	Primary
	Boston		√		√	Primary
	Scituate	√		√		Secondary
	Chatham	√		√		Secondary
	Harwichport	√		√		Secondary
	New Bedford		√		√	Primary
	Westport	√		√		Secondary
RI	Little Compton	√		√		Secondary
	Newport	√		√		Secondary
	Narragansett/Point Judith		√		√	Primary
CT	New London	√		√		Secondary
NY	Montauk	√			√	Primary
	Hampton Bays/ Shinnecock	√		√		Secondary
NJ	Point Pleasant	√		√		Secondary
	Barnegat Light/Long Beach		√	√		Primary
	Cape May			√		Secondary
VA	Chincoteague	√				Secondary
	Newport News			√		Secondary

Table 13. Fishing revenue (unadjusted for inflation) and vessels in top Monkfish ports by revenue, calendar years 2010-2019.

Port	Average revenue, 2010-2019			Total active monkfish vessels, 2010-2019
	All fisheries	Monkfish only	% Monkfish	
New Bedford, MA	$368,627,420	$4,240,639	1%	**479**
Gloucester, MA	$48,514,248	$2,924,748	6%	**190**
Boston, MA	$15,999,540	$1,809,192	11%	**44**
Pt. Judith, RI	$47,753,305	$1,604,760	3%	**214**
Long Beach, NJ	$26,124,402	$1,459,529	6%	**74**
Chatham, MA	$11,764,003	$817,736	7%	**57**
Little Compton, RI	$2,398,385	$802,384	33%	**31**
Montauk, NY	$17,192,554	$726,690	4%	**116**
Hampton Bay, NY	$5,746,477	$578,235	10%	**64**
Portland, ME	$24,798,943	$559,798	2%	**71**
Other (n=146)	$368,846,866	$3,750,338	1%	
Total	**$937,766,141**	**$19,274,049**	**2%**	

Source: NMFS Commercial Fisheries Database (AA data), accessed April 2022.
Note: "Active" defined as landing > 1 lb of monkfish.

The Engagement Index can be used to determine trends in a fishery over time. Those ports with very high monkfish engagement in 2016-2020, generally had very high engagement in 2006-2010 and 2011-2015, except for Boston, MA, which had increasing engagement over this time (Table 14). There are 14 ports that have had high or very high engagement during all three periods, indicating a stable presence in those communities. Annual data on port engagement is available at the Commercial Fishing Performance Measures website.

Table 14. Changes in monkfish fishery engagement over time for all ports with high engagement during at least one year, 2006-2020.

State	Community	Engagement Index			
		2006-2010	2011-2015	2016-2020	2020 only
ME	Portland	High	High	High	High
NH	Portsmouth	High	Med.-High	High	High
MA	Gloucester	Very High	Very High	Very High	Very High
	Boston	High	High	Very High	Very High
	Scituate	High	High	High	High
	Chatham	High	High	High	High
	Harwichport	Medium	Medium	High	High
	New Bedford	Very High	Very High	Very High	Very High
	Westport	Med.-High	High	High	Med.-High
RI	Tiverton	Med.-High	Medium	Medium	Medium
	Little Compton	High	High	High	High
	Newport	High	High	High	High
	Narragansett/Pt. Judith	Very High	Very High	Very High	Very High
CT	Stonington	Med.-High	Med.-High	Med.-High	High
	New London	Med.-High	High	High	High
NY	Montauk	Very High	Very High	Very High	High
	Hampton Bays/Shinnecock	High	High	High	High
NJ	Point Pleasant	High	High	High	High
	Barnegat Light/Long Beach	Very High	Very High	High	High
	Cape May	High	High	High	High
MD	Ocean City	High	High	Med.-High	Med.-High
VA	Chincoteague	High	High	Medium	Medium
	Newport News	Med.-High	High	High	High
NC	Wanchese	High	Med.-High	Med.-High	Med.-High
	Beaufort	Medium	Med.-High	Med.-High	Medium

Source: http://www.st.nmfs.noaa.gov/humandimensions/social-indicators/index.

Landings by State

During CY 2012-2021, monkfish were landed in 11 states, mostly in Massachusetts (61%), followed by Rhode Island (13%), and New Jersey (9%, Table). Massachusetts continues to account for the greatest proportion of all monkfish landings.

Table 15. Monkfish landings by state, CY 2012-2021.

STATE	Monkfish landings (mt)											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	
ME	488	115	257	345	243	178	219	170	411	442	**4,062**	4%
NH	57	86	74	38	50	68	123	119	175	213	**1,463**	2%
MA	5,247	3,812	4,972	4,303	4,227	4,581	5,067	5,943	6,306	6,057	**55,961**	61%
RI	1,303	1,598	2,122	1,495	1,488	1,819	1,648	1,560	1,412	2,306	**11,441**	13%
CT	347	305	457	547	724	380	464	275	246	324	**2,123**	2%
NY	841	766	1,059	1,183	773	748	827	1,193	829	1,005	**5,996**	7%
NJ	1,003	1,418	1,676	1,389	1,351	1,740	1,250	1,335	1,229	1,205	**7,946**	9%
DE	0										**0**	0%
MD	51	83	98	69	86	78	36	51	32	19	**285**	0%
VA	412	402	638	567	413	352	259	218	88	142	**1,748**	2%
NC	10	27	10	3	38	47	56	33	36	20	**244**	0%
Total	**9,758**	**8,612**	**11,365**	**9,940**	**9,394**	**9,992**	**9,949**	**10,897**	**10,765**	**11,735**	**91,271**	**100%**

Source: ACCSP database, accessed April 2022.

Research-Set-Aside Program

Monkfish regulations indicate that 500 DAS be made available for cooperative research through the Research-Set-Aside (RSA) program (this total is deducted from the 46 DAS allocated to each limited access permit; currently, each permit receives 45.2 DAS for commercial fishing). When the Experimental Fisheries Permit is approved for an RSA research project, the project has a DAS cap and poundage cap, calculated by setting each RSA DAS to be equal to double the possession limit for vessels with permit categories A and C fishing in the SFMA. For individual RSA trips, there is no possession limit, and vessels may not switch from using a monkfish DAS to an RSA DAS mid-trip.

Use of RSA DAS and landings allowed has generally declined since FY 2013 (Table 16). Of the three monkfish awards made in 2018/2019, one of the projects was successful in using almost all their DAS, while the other two less so. About half of the anticipated revenue was generated for research (~$200,000). Use of 2020 and 2021 RSA DAS has been low.

Table 16. Monkfish RSA awards compared to RSA landed catch, FY 2013-2021.

Fishing Year	DAS Awarded	DAS used	% DAS Used	Allowed (lb)	Landed (lb)	
2013	426	342	80%	1,363,200	1,207,174	89%
2014	500	354	71%	1,600,000	1,289,243	81%
2015	500	301	60%	1,600,000	1,290,238	81%
2016	500	332	66%	1,776,000	1,541,240	87%
2017	500	117	23%	1,776,000	679,180	38%
2018	500	285	57%	2,307,000	1,236,288	61%
2019	500	249	50%	2,307,000	1,024,955	50%
2020	500	Awards ongoing				
2021	500					

MONKFISH ADVISORY PANEL INFORMATION

The Advisory Panel was asked the following questions sequentially, but responses are organized below according to themes. These are the responses of individual AP members and may not reflect the experience or viewpoints of the entire AP, or the fishery at-large, and have not been independently verified. This summary captures the flavor of the comments but should not be assumed to be direct quotes. A few explanatory footnotes have been added by the PDT. There are 12 AP members; of the ten active monkfish fishermen on the AP, most are from ports south of Massachusetts and most fish in the SFMA, though a few may also fish in the NFMA.

1. *What factors have influenced recent fishing activity and how (e.g., domestic and foreign markets, costs, environment, fish distribution, regulations)?*
2. *How might these factors change in FY 2022? How do you expect the fishery to adjust?*
3. *How has the global pandemic changed the fishery? Do you see the fishery returning to a pre-pandemic state or is there a new normal emerging?*
4. *Considering the fishery data, are there specific regional or port differences in fishery performance that are important?*
5. *Are the current fishery regulations appropriate? How could they be improved and how would the improvements affect the fishery?*
6. *Have any recent regulatory changes affected the fishery and how (e.g., implemented in 2020, vessels using the Interactive Voice Response system now must submit a trip declaration within an hour of leaving port, like vessels using the Vessel Monitoring System)?*
7. *What would you recommend as research priorities?*
8. *What is hindering the use of RSA DAS to raise funds for monkfish research? How might the Monkfish RSA program improve?*
9. *What else is important for the Council to know (e.g., impacts of right whale regulations, offshore wind development)?*

Market prices and demand. Low monkfish prices have been the major factor driving the fishery in recent years. Markets have closed. The pandemic has been a factor in reducing demand, however, prices were decreasing well beforehand. For example, a New Jersey-based processor had been a significant buyer of monkfish, but demand for exports has dropped. Monkfish had been exported to Korea,[3] but the demographics of that country are changing and there is less desire among the younger generations there for monkfish. There needs to be efforts to find new markets to build prices back up. There seems to be a small increase in monkfish prices this year, which is encouraging.

Costs increasing relative to price. The costs for fuels, buoys, gillnets, and other gear have increased substantially. Sometimes necessary gear replacements have not been available. It used to be possible to buy a gillnet for $150, but it is now more like $300 per net. Other costs to consider are the shoreside/shipping costs to transport landed fish to dealers and/or processors. For example, for boats landing on Long Island (e.g., Montauk and Shinnecock), the costs to ship monkfish to New Bedford are too high. It costs $0.38 per pound to ship, and the shipper can only get $0.30 for the fish. Fishermen have done that for the last few years but will not continue doing so.

Employment and economic impacts. It is getting increasingly difficult to find reliable captains and crew. With price declines and cost increases, it is difficult for wages to be competitive with onshore industries. Unseasoned captains tend to cause more gear damage, which drives up the cost of gear with buying new nets. The possession limits constrain the fishery to a daily income limit that is crippling. Inshore gillnetters are financially struggling. The market issues are solvable but being trapped in DAS daily income trap is killing us. Fishing is a tough lifestyle, and we must be able to pay people more than what

[3] Monkfish Committee notes the Korean market for whole monkfish developed in the mid-1990s.

they would make onshore and that is not happening. We are hiring people that 10 years ago we would not have hired; you take live bodies – good enough.

Recent regulatory changes. Starting in FY 2020, the ability to "preload" DAS was removed for vessels declaring trips with the Interactive Voice Response System (IVR),[4] has reduced flexibility and efficiency. Vessels can no longer "triple load" DAS and fish farther offshore. This change caught fishermen off guard, and AP members do not recall any discussion about this by the Council or people advocating for that change. Those vessels using IVR are primarily the small Category A and B gillnet vessels fishing in the south, not part of the groundfish fishery. This change is hurting this fleet and the change happened without warning.

Protected resources. There are several area closures, particularly for protected species, that have had negative impacts on the fishery. The last round of Atlantic Large Whale Take Reduction Team regulations did not go well for the lobster fishery, and there is much concern about potential new regulations targeting other pot gear and gillnets[5] that could put many vessels out of business. If there are large-scale closures, that could trump every other concern for the fishery.

Impacts of offshore development. In Rhode Island Sound, there were recently three or four years of geotechnical and geophysical surveying for wind farm development around the clock on top of Cox's Ledge. Some of that sonar equipment can penetrate the bottom up to 1 km deep. Fishermen were told that the surveys were not impacting the ecosystem, and less impactful than the fish finders used by fishing vessels, but that is difficult to believe. There is no doubt that these surveys had an effect. Fishermen must steam farther offshore now to make a living; we used to count on fishing on Cox's Ledge in the spring and early fall. However, the fall fishery is seemingly gone out of Rhode Island and southern Massachusetts. There are so many issues with wind. Skates are impacted by electromagnetic fields; monkfish impacts are unknown. With unexperienced crew, the captain will not be able to rest during transit due to navigation concerns.

Interaction with skates. When fishing on a Monkfish DAS, vessels are constrained by possession limits for monkfish and skates. Particularly when skate possession limits are low,[6] vessels get constrained by the skate possession limit and are unable to land the full limit for monkfish (e.g., if there are 12 gillnet panels loaded with skates, there will not be monkfish). Sometimes on a Monkfish DAS trip, the value of the skate or other landings can exceed monkfish. There are boats that go out on a Monkfish DAS to target skates because they do not have to go as far offshore in January-March. They will take a bycatch of monkfish at that point. Skates are a blessing overall, but they can be constraining as well. Especially in the spring, there is less monkfish landed because of the skate limits.

Regional differences. Southern boats are more limited by DAS and trip limits than northern boats, which have more DAS and unlimited possession limits when fishing on both a monkfish and groundfish DAS. Having the preloading option taken away (for the boats using IVR), has jeopardized use of the TAL even

[4] When the FY 2020 specifications were implemented, NOAA Fisheries clarified the trip declaration requirements such that vessels using IVR had to call in a trip no later than one hour ahead of leaving port (no timeframe was specified prior). This change made the call-in timeframe for vessels using IVR match that of vessels using the Vessel Monitoring System, so that declaration requirements were consistent across the monkfish fishery (no vessels can "preload" DAS now), and vessels using IVR could no longer use three DAS. This was an administrative change not developed by the Council.

[5] Phase 2 of the Atlantic Large Whale Take Reduction Plan is under development, and it is not yet known if/what restrictions will be placed upon the gillnet fishery to reduce risk of right whale entanglements.

[6] Since FY 2020, the skate wing possession limit has been 3,000 lb (wing weight) from May 1 – August 30 and 5,000 for the rest of the year. Possession limits were lower in years prior.

more. There are fishermen in Southern New England with monkfish Category C and D permits but fish in the southern management area and use IVR rather than VMS.

The impetus for having no monkfish possession limit when fishing on both a monkfish and groundfish DAS was to better use the monkfish TAL in the northern area and provide more revenue to groundfish vessels.[7] In the southern area, fishermen are looking to target monkfish, and abundance is not the issue. The issue is the DAS and landing limits; southern boats could be more efficient with more of both. There are fewer Category A vessels over time, and that is due to economics. Vessels are selling out or keeping tied to the dock.

Fishery adjustments. Because of the low ex-vessel revenue and cost increases, vessels have shifted fishing to more inshore areas to reduce operating costs. Vessels in the south have been fishing on skates and catching fewer monkfish as a result. With all these challenges, there are multiple vessel owners that are choosing to either not fish or be more selective in the seasons and/or areas they fish. Owners of multiple vessels used to run one vessel themselves, and hire a captain and crew for the other, but there is little of that going on now with crew, price, and cost issues.

In the southern area, there has not been much of a monkfish fishery for the last four years, whether that is due to wind farms or warmer waters; it is hard to be definitive. The fishery has become nonexistent; in October and November, there is nothing. That used to be a good time of year, but there is no point in putting nets out this fall. Some vessels will not set their gillnets until the price improves.

Most other fisheries are at record high prices (e.g., lobster, scallops), or their seasonal peak is what boats are getting now year-round (e.g., black sea bass, fluke). In the monkfish and skate fisheries, they generally both go to the same dealers. The prices are low, and it all must be exported. Maybe that is the problem, but dealers need to be helping find new inroads elsewhere. FY 2005-12 were good years; FY 2016-19 were not. Hopefully, dealers will look more to domestic markets. One dealer in Rhode Island is doing that. It is necessary, because the fishery has hit the bottom on what it can take for prices. Some of the price drop is related to the pandemic, but it is unfortunately the "new normal" until new markets can be developed.

Ideas for management improvements. The skate and monkfish fisheries should be managed together. Skates should not be an open access fishery and the Skate Committee does not control access to the fishery. Skate is limiting monkfish landings in the southern management area.

Like the Monkfish RSA program, there should be a running clock, so that if monkfish is caught it can be landed rather than wasted. This would help a lot of people out, and there would be fewer concerns about whales with less gear in the water. If a vessel has the DAS, it should be able to use as many on a trip as needed to not be wasteful and have lower bycatch. However, any increases should be considered with caution. While fishermen want more DAS and higher trip limits, there is a concern about the number of latent permits in the fishery, and potential incentives for vessels to reactivate if limits are raised. With a running clock, there is potential to land all the monkfish too early in the year, and that would drive prices down. A derby fishery should be avoided.

Ideas for research priorities. It is very important to develop domestic markets, so research to develop markets is key.[8] The pingers used on gillnets to deter harbor porpoise attract seals. The sound frequency that must be used in our area is not used in other parts of the world and is thought to be less successful at deterring seals. There should be research about the number of pingers per net that are necessary (fishery must use twice as many pingers as the manufacturer's specifications call for).

[7] This measure was implemented in Monkfish Framework 9 (2016).

[8] There is a project funded by the 2022 Saltonstall-Kennedy Grant Program on monkfish market development.

Dredge discards have been high and there could be research to reduce those discards, but notably, the 2015 year-class has moved through the fishery. Scallop vessels are not landing monkfish, because it is not economical to do so. There would be fewer discards if markets improve. There was recent research on discard mortality that showed the mortality rate is much lower than the 100% assumption (Weissman *et al.* 2021). Also, scallop fishing in the Mid-Atlantic is becoming more limited, which will reduce southern discards (e.g., area around the Mud Hole is now closed[9]).

Monkfish RSA program. The RSA DAS are not getting fished now due to economics. Boats are not able to fish their own DAS, let alone RSA. Because revenue and the ability to land large quantities of monkfish are both down (e.g., skate is limiting the monkfish fishery), there is less incentive to fish the RSA DAS. Hopefully, markets will improve soon. The program has been very good and has produced many useful research projects. Some of the fishermen awarded RSA DAS have had some complaints about the number of additional reporting requirements that disincentivizes applying for use of RSA DAS.

REPORT CONTRIBUTORS

Plan Development Team Members

Dr. Rachel Feeney (NEFMC/PDT Chair), Sharon Benjamin (GARFO/NEPA), Jenny Couture (NEFMC), Dr. Jon Deroba (NEFSC/PopDy), Jason Didden (MAFMC), Dr. Tara Dolan (MADMF), Eric Schneider (RI DEM DMF), Alicia Schuler (GARFO/PRD), Renee St. Amand (CT REP), Spencer Talmage (GARFO/SFD), John Walden (NEFSC/SSB), and Kris Winiarski (GARFO/APSD).

Advisory Panel Members

Greg DiDomenico (AP Chair), James Dopkin, Timothy Froelich, Eric Hansen, Michael Karch, Greg Mataronas, William McCann, Randall Morgan, Nicholas Muto, John Our, Ted Platz, and Christopher Rainone.

REFERENCES

Clay P.M., L.L. Colburn, J.A. Olson, P. Pinto da Silva, S.L. Smith, A. Westwood & J. Ekstrom (2007). Community Profiles for the Northeast U.S. Fisheries.

Collette B.B. & G. Klein-MacPhee, eds. (2002). *Bigelow and Schroeder's Fishes of the Gulf of Maine*. Washington, DC: Smithsonian Institution Press. 882 p.

NEFSC (2020). *Operational Assessment of the Black Sea Bass, Scup, Bluefish, and Monkfish Stocks, Updated through 2018*. Woods Hole, MA: U.S. Department of Commerce. NEFSC Reference Document 20-01. 160 p.

Richards R.A. (2016). *2016 Monkfish Operational Assessment*. Woods Hole, MA: U.S. Department of Commerce. NEFSC Reference Document 16-09. 109 p.

Richards R.A., P.C. Nitschke & K.A. Sosebee (2008). Population biology of monkfish Lophius americanus. *ICES Journal of Marine Science. 65*(7): 1291-1305.

Weissman A., R. Knotek, J. Mandelman, D. Rudders, S. Roman & J. Sulikowski (2021). Determining discard mortality of monkfish in a sea scallop dredge fishery. *North American Journal of Fisheries Management. 41*.

[9] Likely referring to the New York Bight scallop closure.

Monkfish-related excerpts...

2022 Management Track Peer Review Panel Report

Richard Merrick (Chair)[1], Matt Cieri[2], Yan Jiao[3], and Cate O'Keefe[4]

[1]NOAA Fisheries Service (retired), [2]Maine Department of Natural Resources, [3]Virginia Tech University, [4]Fishery Applications Consulting Team

Executive Summary

Eleven fish stock assessments were reviewed by the September 2022 Management Track peer review panel. Eight of these were Level 2 Expedited Reviews: Gulf of Maine and Georges Bank winter flounder (*Pseudopleuronectes americanus*), Atlantic halibut (*Hippoglossus hippoglossus*), Georges Bank haddock (*Melanogrammus aeglefinus*), north and south monkfish (*Lophius piscatorius*), Southern New England/MidAtlantic yellowtail flounder (*Limanda ferruginea*), and American plaice (*Hippoglossoides platessoides*). The remaining three stocks received Level 3 Enhanced Review: white hake (*Urophycis tenuis*), Gulf of Maine haddock (*Melanogrammus aeglefinus*), and pollock (*Pollachius virens*). Levels of review were as recommended by the Assessment Oversight Panel (Appendix A).

The Peer Review Panel (Panel) for the September 2022 Management Track Assessments met via webinar on September 19-22, 2022. The Panel was to determine whether the completed management track assessment was technically sufficient to (a) evaluate stock status, (b) provide scientific advice and (c) successfully address the assessment Terms of Reference (Appendix B). Tables 1 and 2 present a list of the stocks, names of the lead analyst/presenters, and conclusions about stock status and the assessment.

Attendance at the meeting is provided in Appendix C with the Agenda shown in Appendix D.

We thank Russ Brown (Population Dynamics Branch Chief) and Michele Traver (Assessment Process Lead) for their support during the meeting and to the staff of the Population Dynamics Branch at NEFSC for the open and collaborative spirit with which they engaged the Panel. Dr. Brown's presentation on Data Changes was especially appreciated.

Our thanks also extend to the rapporteurs for taking extensive notes during the meeting and to staff of the New England Fishery Management Council/NOAA Fisheries Greater Atlantic Regional Fisheries Office who provided context and additional background.

The Panel has suggestions for improvements that could be made for review of Management Track assessments:

1. The SASI portal is an incredible asset for these reviews, and we support its continued maintenance. It is not unusual for documents and data to change on the drive during the period of the review, and as such, it would be useful if a version control mechanism was implemented to allow the reviewers to be notified when changes are made to documents on the site.

2. For transboundary stocks, it would be useful to have a presentation of the science and management for the Canadian fishery.
3. For species with multiple stocks, consider providing an overview of stock status, structure, etc. at the beginning of the stocks' presentations.

The Panel also has several crosscutting recommendations with respect to the individual stock assessments:

1. Assessment analysts should consider splitting the bottom trawl time series into two stanzas – Albatross versus Bigelow for those stocks where calibration between the two vessels surveys results was weak (e.g., pollock and white hake).
2. The NEFSC Bottom Longline Survey should be continued and considered for incorporation in future stock specific Management Track assessments once the time-series has grown.
3. The ASMFC shrimp survey provides valuable information on early year-classes for several species and should continue to be supported by NOAA (and perhaps renamed to the "Summer Survey").
4. Reduction in Port sampling for individual lengths and age structures represents a significant threat to the stock assessment enterprise. NOAA should decide whether it can return Port sampling to levels comparable with those achieved prior to 2019. If they cannot, they should increase catch sampling by observers (either ASM or NEFOP) to balance the loss of these data.
5. NOAA should continue to evaluate the use of dynamic reference points with analytic assessments.
6. Assessments for stocks at very low abundance with low fishery mortality rates, showed sharp increases in abundance in projection years (e.g., Gulf of Maine winter flounder, SNE/MA yellowtail flounder). This is a highly uncertain prediction because these increases may be an artifact of the model considering that low fishing mortality directly leads to increased abundance.

The Panel considered general data changes that were applied across assessments, including:

1. Adaptation to survey indices resulting from the missing 2020 research surveys due to the Covid-19 pandemic;
2. Increased uncertainty in catch related indices resulting from reduced Port, NEFOP/ASM observer, and recreational intercept sampling in 2020;
3. Use of the Catch Accounting and Monitoring System (CAMS) data for commercial landings for 2020 and 2021; and
4. Revised swept-area adjusted survey indices for the NEFSC Bigelow Bottom Trawl Surveys.

Monkfish - North

The 2022 assessment for the northern stock of monkfish (*Lophius piscatorius)* updates the 2019 assessment (NEFSC 2020[7]) with additional commercial fishery catch data through 2021, and research survey indices of abundance and area-swept biomass through 2022.

An analytic assessment was not possible due to the lack of a reliable aging methodology. As a result, the "Ismooth" (previously planBsmooth; Legault et al. in press[8]; https://github.com/cmlegault/ PlanBsmooth) approach used in the 2020 assessment was updated for this management track assessment. This "Ismooth" approach re-scales the NMFS spring and fall BTS by their respective means (i.e., so each time series has mean equal to one) and averages the fall observation in year y with the spring observation in year y+1 to create a single time series for analysis. A LOESS-smooth is then applied to the combined time series, and a log-linear regression fit to the most recent three years of index predictions from the LOESS fit. The slope of the regression provides a direction and rate of change in the indices that is multiplied by recent catch to provide catch advice. However, neither of the 2020 bottom trawl surveys were available. Consequently, the preferred approach was to use a combined spring and fall BTS time series with the missing 2020 observations replaced with the mean of the 2019 and 2021 observations. Using this method, the multiplier was 0.829 in the North.

An "Ismooth" assessment does not allow for the estimation of reference points (i.e., $F_{MSY,}$ and SSB_{MSY} cannot be determined). Therefore, the status of the stock relative to overfishing and being overfished must be unknown.

Short term projections are not possible using the "Ismooth" approach.

The Panel spent considerable time discussing the appropriate term which the multiplier should be applied against – ABC or catch. The former has been the practice since the Ismooth approach was first applied to monkfish and moving to catch would result in a major shift in catch advice. Applying the multiplier against the catch would result in a significant decrease in ABC advice. Estimates of area-swept minimum biomass developed from the chain sweep study indicate a high biomass from what is observed in the BTS but follow the same trends. On the other hand, the Ismooth approach was designed to be applied to catch and is derived from catch data. Other index methods also are based on catch. Thus, application of the multiplier to catch is more consistent with ISmooth's design and other index based methods[9][10]. Ultimately the

[7] NEFSC. 2020. Operational assessment of the black sea bass, scup, bluefish, and monkfish stocks, updated through 2018. NEFSC Ref Doc 20-01; 160 p.

[8] Legault, C.M., J. Wiedenmann, J.J. Deroba, G. Fay, T.J. Miller, E.N. Brooks, R.J. Bell, J.A. Langan, J.M. Cournane, A.W. Jones, and B. Muffley. 2022. Data Rich but Model Resistant: An Evaluation of data- limited methods to manage fisheries with failed age-based stock assessments. Canadian Journal of Fisheries and Aquatic Sciences. https://doi.org/10.1139/cjfas-2022-0045

[9] Carruthers, T., L. Kell, D. Butterworth, M. Maunder, H. Geromont, C. Walters, M. McAllister, R. Hillary, P. Levontin, T. Kitakado, and C. Davies. 2015. Performance review of simple management procedures. ICES Journal of Marine Science 73(2):464−482.

[10] NEFSC. 2020. Research Track Assessment for Index-Based Methods and Control Rules. Woods Hole, MA. 59 p.

group could not reach a consensus decision, though a majority supported the application of the multiplier against catch.

The Panel also considered whether stock status should be considered unknown. Given that the current stock status is based on a failed assessment, and that the Ismooth approach does not generate reference points, the Panel strongly ***recommended*** *listing stock status as unknown.*

The Panel had several research ***recommendations****:*

- *Both the shrimp and scallop survey indices should be considered for inclusion in future assessments*
- *Given the lack of success developing an aging technique, NMFS should not continue to pursue this avenue of research; consider estimating growth through cohort tracking*
- *Given the lack of growth information on Monkfish, it was recommended the analyst explore a Simple Delay-Difference Model as a potential modeling approach relative to the Ismooth method*
- *Other Data Limited methods should also be considered for the assessment.*
- *A better understanding of stock structure (beyond North and South) could improve the assessment effort*
- *Reconsider the catchability coefficient of the chain swept estimates and how this applies to separate surveys*

The Panel concluded that the 2022 assessment update for northern stock of monkfish fulfilled the recommendations of the AOP and is technically sufficient to provide scientific advice and meets the Terms of Reference for the stock's assessment. It does not provide sufficient information to evaluate stock status. The assessment represents Best Scientific Information Available (BSIA) for this stock for management purposes.

Monkfish - South

The 2022 assessment for the southern stock of monkfish (*Lophius piscatorius)* updates the 2019 assessment (NEFSC 2020[11]) with additional commercial fishery catch data through 2021, and research survey indices of abundance and area-swept biomass through 2022.

An analytic assessment was not possible due to the lack of a reliable aging methodology. As a result, the "Ismooth" (previously planBsmooth; Legault et al. in press[12]; https://github.com/cmlegault/ PlanBsmooth) approach used in the 2020 assessment was updated for this management track assessment. This "Ismooth" approach re-scales the NMFS spring and fall bottom trawl survey (BTS) by their respective means (i.e., so each time series has mean equal to one) and averages the fall observation in year y with the spring observation in year y+1 to create a single time series for analysis. A LOESS-smooth is then applied to the combined time

[11] NEFSC. 2020. Operational assessment of the black sea bass, scup, bluefish, and monkfish stocks, updated through 2018. NEFSC Ref Doc 20-01; 160 p.

[12] Legault, C.M., J. Wiedenmann, J.J. Deroba, G. Fay, T.J. Miller, E.N. Brooks, R.J. Bell, J.A. Langan, J.M. Cournane, A.W. Jones, and B. Muffley. 2022. Data Rich but Model Resistant: An Evaluation of data- limited methods to manage fisheries with failed age-based stock assessments. Canadian Journal of Fisheries and Aquatic Sciences. https://doi.org/10.1139/cjfas-2022-0045

series, and a log-linear regression fit to the most recent three years of index predictions from the LOESS fit. The slope of the regression provides a direction and rate of change in the indices that is multiplied by recent catch to provide catch advice. However, neither of the 2020 bottom trawl surveys were available. Consequently, the preferred approach was to use a combined spring and fall BTS time series with the missing 2020 observations replaced with the mean of the 2019 and 2021 observations. Using this method, the multiplier was 0.646 in the south.

An "Ismooth" assessment does not allow for the estimation of reference points (i.e., $F_{MSY,}$ and SSB_{MSY} cannot be determined). Therefore, the status of the stock relative to overfishing and being overfished must be unknown.

Short term projections are not possible using the "Ismooth" approach.

The Panel spent considerable time discussing the appropriate term which the multiplier should be applied against – ABC or catch. The former has been the practice since the Ismooth approach was first applied to monkfish and moving to catch would result in a major shift in catch advice. Applying the multiplier against the catch would result in a significant decrease in ABC advice. Estimates of area-swept minimum biomass developed from the chain sweep study indicate a high biomass from what is observed in the BTS but follow the same trends. On the other hand, the Ismooth approach was designed to be applied to catch and is derived from catch data. Other index methods also are based on catch, rather than ABC[13][14]. Thus, application of the multiplier to catch is more consistent with ISmooth's design and other index based methods. Ultimately the group could not reach a consensus decision, though a majority supported the application of the multiplier against catch.

The Panel also considered whether stock status should be considered unknown. Given that the current stock status is based on a failed assessment, and that the Ismooth approach does not generate reference points, the Panel strongly ***recommended*** *listing stock status as unknown.*

The Panel had several research ***recommendations****:*

- *Both the shrimp and scallop survey indices should be considered for inclusion in future assessments*
- *Given the lack of success developing an aging technique, NMFS should not continue to pursue this avenue of research further. Instead, NMFS should consider estimating growth through cohort tracking*
- *Given the lack of growth information on Monkfish, it was recommended that the analyst explore a Simple Delay-Difference Model as one potential modeling approach in the next research track assessment.*
- *Other Data Limited methods should also be considered for that assessment.*

13 Carruthers, T., L. Kell, D. Butterworth, M. Maunder, H. Geromont, C. Walters, M. McAllister, R. Hillary, P. Levontin, T. Kitakado, and C. Davies. 2015. Performance review of simple management procedures. ICES Journal of Marine Science 73(2):464−482.

14 NEFSC. 2020. Research Track Assessment for Index-Based Methods and Control Rules. Woods Hole, MA. 59 p.

- *A better understanding of stock structure (beyond the border of Northern and Southern stocks) could improve the assessment effort*
- *Reconsider the catchability coefficient of the chain swept estimates and how this applies to separate surveys*

The Panel concluded that the 2022 assessment update for southern stock of monkfish fulfilled the recommendations of the AOP and is technically sufficient to provide scientific advice and meets the Terms of Reference for the stock's assessment. It does not provide sufficient information to evaluate stock status. The assessment represents Best Scientific Information Available (BSIA) for this stock for management purposes.

[15] NEFSC. 2012. 54th Northeast Regional Stock Assessment Workshop (54th SAW) Assessment Report. US Dept Commer, NOAA Fisheries, Northeast Fish Sci Cent Ref Doc. 12-18.; 600 p.

Appendix A. Summary of Assessment Oversight Panel Meetings for September 2022 Management Track Stock Assessments

The NRCC Assessment Oversight Panel (AOP) met to review the operational stock assessment plans for ocean pout, Atlantic wolffish, Georges Bank winter flounder, Gulf of Maine winter flounder, Cape Cod/Gulf of Maine yellowtail flounder, southern New England/mid-Atlantic yellowtail flounder, northern and southern monkfish, Georges Bank haddock, Gulf of Maine haddock, Atlantic halibut, witch flounder, white hake and pollock stocks on May 23-24, 2022. The AOP also met on August 3, 2022 to review the assessment plan for American Plaice, which underwent a Research Track peer review in July 2022. Four assessments were recommended for Level 1 Reviews (Direct Delivery) and these assessments will undergo an internal review before being delivered to the appropriate management body. The assessments for stocks/species recommended for Level 2 and 3 peer reviews will be reviewed during a meeting September 19-23, 2022.

The AOP consisted of:

Russell W. Brown, Ph.D. (AOP Chair), Northeast Fisheries Science Center, Woods Hole, Massachusetts. (5/23, 5/24, 8/3)

Gary Nelson, Ph.D., representing the Atlantic States Marine Fisheries Commission, Massachusetts Division of Marine Fisheries. (5/23, 5/24, 8/3)

Lisa Kerr, Ph.D., Chair of the NEFMC Scientific and Statistical Committee, Gulf of Maine Research Institute. (5/23, 5/24, 8/3)

Paul Rago, Ph.D., Chair of the MAFMC Scientific and Statistical Committee, NOAA Fisheries (retired). (5/24, 8/3)

Michael Wilberg, Ph.D., vice-chair of the MAMFC Scientific and Statistical Committee, University of Maryland. (5/23)

Meeting Details:

These meetings were guided by the NRCC-approved stock assessment guidance documents. Three background documents were provided to the Panel: (1) an updated prospectus for each stock; (2) an overview summary of all the salient data and model information for each stock; and (3) the NRCC Guidance memo on the Operational Assessments. Prior to the meeting, each assessment lead prepared a proposal for their Management Track Assessment. The proposal reflected the research track or most recent assessment results, the peer review panel Summary Report results and any initial investigations conducted for the management track assessment.

At the meeting, each assessment lead gave a presentation on the data to be used, model specifications (if applicable), evaluation of model performance, the process for updating the Biological Reference Points, the basis for catch projections, and an alternate assessment approach if their analytical assessment was rejected by the peer review panel.

Major Recommendations for Review of Individual Stocks:

The sharp increase in landings in Canadian waters and declining indices in the US poses a dilemma for application of the current FSD model. Canada's increase in landings is driven by results of a DFO assessment that increased the quota. This assessment is likely to have indices that are trending upward in contrast to US indices which appear to be either level or slightly decreasing. Nonetheless, the slightly lower FSD multiplier, when multiplied by the increased total catch, results in a large increase in potential US catch. The appropriateness of this calculation was discussed but not resolvable during the AOP meeting.

The Panel suggested that an investigation of the basis for the increase in Canadian landings would be useful. Comparisons of US index trends with Canadian indices of abundance might also be useful. The assessment lead will also investigate the applicability of the Cooperative Longline survey in the Gulf of Maine in the FSD model. The assessment lead also proposes to modify and align some of the Stat Areas with survey areas but does not plan to redefine stock areas. In view of the potential changes in the model framework and addition of a new index, the Panel recommended a **Level 2 (Expedited)** review for Atlantic halibut.

Witch Flounder (AOP Lead: Russ Brown)
Recommendation: Level 1 (Direct Delivery)
Witch Flounder currently uses an empirical approach to provide management advice. It is a unit stock, so is less dependent on CAMS approaches to allocate catch to separate stock areas. The NEFSC bottom trawl surveys will be updated to include swept area adjusted abundance and biomass surveys. 2020 survey values missing due to Covid will be treated as missing in the application of the empirical approach. It was noted that the age structure of the population continues to be truncated and the analyst will include supplement data in the data portal that is not directly used in the empirical analysis. The panel concluded that a **Level 1 (Direct Delivery)** review was warranted.

Northern and Southern Monkfish (AOP Lead: Gary Nelson)
Recommendation: Level 2 (Expedited Review)
The current assessment method for the northern and southern Monkfish stocks is the index-based method known as "PlanBsmooth" that uses fishery landings and discards, and NEFSC fall, spring and summer survey indices. The proposed work for the 2022 management track assessment includes updating all landings, discards and the survey data through 2021 (the spring survey will be updated through 2022). The landings will be updated via the CAMS system and a new method for estimating discards will be examined. Also, the old NEFSC indices will be replaced with new NEFSC area-swept indices and methods for dealing with the missing 2020 survey values will be explored. Additionally, the discard mortality assumption of Monkfish in scallop dredges will be re-examined, how extreme discard observations are handled will be changed, and adjustments to statistical areas that define the managements will be made consistent.

The main discussion of the AOP pertained to the proposed exploration of imputing missing survey values. One member wondered what the potential outcome would be and suggested that including an additional year further back in time might help with stability of resulting catch advice. The analyst responded that, based on earlier simulations examining biases in the PlanBsmooth method, catch advice should be fairly robust with a missing year, but he will try the suggested method. The AOP panel agreed that a **Level 2 (Expedited)** review is appropriate for the proposed changes.

Draft 2022 Monkfish Management Track Assessment Report

Jonathan J. Deroba

8/15/2022

TOR 1. Estimate catch from all sources including landings and discards.

Catch (landings and discards) were updated from 1989, when observer data first became available for discard estimation, to 2021. The Northeast Fisheries Science Center estimates discards by fleet (gear), half year (semester), and management area using observer data (NMFS 2014). For otter trawls and gillnets, the observed monkfish discard-per-kept-monkfish ratio is used to expand the sampled observations to total monkfish discards, while for scallop dredges and shrimp trawls the observed monkfish discard-per-all-kept-catch ratio is used. Several changes were made to the discard estimation methods. The ratio estimator used for discard estimation was changed from a simple ratio (D1) to a combined ratio (D2), which is the regional norm used by the Standardized Bycatch Reporting Methodology (NMFS 2014). Also, some observations that were previously excluded from the discard estimation were added back to the dataset. These observations were returned to the dataset because the reasons for their exclusion were not clear and avoiding manual deletions of observations makes the discard time series more easily reproducible. Switching the ratio estimator had a negligible effect on the discard time series, but adding the observations that were previously excluded caused some significant changes in a few years, most notably 2001 for both areas (Figure 1). The increase in discards in 2001 in both regions can be traced to 1-2 observations with unusually large discards. The fact that this increase in estimated discards occurred in 2001 in both regions appears to be a coincidence because the observations occurred in different fleets in each region (gillnet in semester 2 in the North but trawl in semester 1 in the South). The statistical areas used to define each management area for discard estimation were discovered to be in error during this management track assessment. The areas were corrected and made consistent with the stock definitions used for landings and the Catch Accounting and Monitoring System (NEFMC 1998; https://www.fisheries.noaa.gov/resource/map/monkfish-fishery-management-areas). Correcting the areas had a relatively minor effect on the discard estimates (Figure 2). The most notable change made to the discard estimation was a downward revision of the assumed discard mortality rate in the scallop dredge fleet from 100% to 64%. This revision was based on Weissman et al., 2021. While Weissman et al., 2021 reported a range of possible discard mortality rates from 28% to 64% depending on assumptions about the causes of post-release mortality, consultation with the monkfish Plan Development Team suggested a preference for using a more conservative value on the higher end, rather than make a larger change based on a single study with a relatively small sample size that only occurred in one management area (Table 1; Figures 3-6). Consequently, a value of 64% was used.

Table 1: Total monkfish landings, discards, and total catch (MT), assuming a 64% discard mortality rate in the scallop dredge fleet.

YEAR	Landings	Discards	Region	TotCatch
1989	6396	364	North	6760
1990	5842	240	North	6081
1991	5727	491	North	6218
1992	6925	703	North	7628
1993	10645	638	North	11283
1994	10847	325	North	11172

YEAR	Landings	Discards	Region	TotCatch
1995	12020	1655	North	13675
1996	10769	1886	North	12654
1997	9659	857	North	10516
1998	7482	722	North	8204
1999	8898	726	North	9625
2000	10681	870	North	11551
2001	13224	3066	North	16290
2002	13634	1159	North	14794
2003	14398	1117	North	15515
2004	12796	516	North	13312
2005	10097	624	North	10722
2006	7016	578	North	7594
2007	5093	575	North	5668
2008	3875	317	North	4192
2009	3321	455	North	3777
2010	2923	294	North	3217
2011	3328	370	North	3698
2012	4081	493	North	4574
2013	3355	459	North	3814
2014	3434	484	North	3918
2015	4086	572	North	4658
2016	4723	734	North	5457
2017	7105	840	North	7945
2018	6009	1253	North	7262
2019	6084	1080	North	7163
2020	5587	723	North	6310
2021	5121	802	North	5923
1989	8296	3401	South	11697
1990	7142	197	South	7339
1991	9800	252	South	10052
1992	13925	600	South	14525
1993	15061	918	South	15979
1994	12052	1764	South	13816
1995	14311	2359	South	16671
1996	15729	1932	South	17661
1997	18508	1480	South	19987
1998	19128	1148	South	20276
1999	16300	1797	South	18097
2000	10188	1706	South	11895
2001	10074	9210	South	19285
2002	9259	2682	South	11941
2003	11679	2886	South	14565
2004	8374	2515	South	10889
2005	8917	2222	South	11140
2006	7565	1683	South	9248
2007	7055	2023	South	9078
2008	7139	1390	South	8529
2009	5260	1139	South	6399
2010	4330	1476	South	5806
2011	5271	1566	South	6837
2012	5674	1962	South	7636
2013	5207	1372	South	6579

YEAR	Landings	Discards	Region	TotCatch
2014	5099	1188	South	6287
2015	4550	919	South	5468
2016	4331	2114	South	6445
2017	3796	3544	South	7339
2018	4388	3476	South	7864
2019	4373	3358	South	7732
2020	2593	2295	South	4887
2021	2005	2340	South	4346

TOR 2. Evaluate indices used in the assessment (e.g., indices of relative or absolute abundance, recruitment, state surveys, age-length data, etc.).

All indices and length frequencies were updated through 2021, with the exception of National Marine Fisheries Service (NMFS) spring bottom trawl surveys (BTS), which were updated through 2022 (Figures 7-13). Recruitment indices were also updated using the same surveys and length cut-offs to define age-0 monkfish as in previous assessments (Table 2; Figures 14-15). An absolute measure of biomass estimated using paired tows between a chainsweep and rockhopper sweep was also updated for the fall NMFS BTS survey (Figure 16; Miller et al., in review).

Table 2: Range of lengths used to define age-0 recruitment indices.

Stock	Survey	Lengths
North	NMFS Fall BTS	6-18cm
South	NMFS Fall BTS	12-28cm
South	Scallop	7-15cm

TOR 3. Estimate annual fishing mortality, recruitment and stock biomass (both total and spawning stock) as possible (depending on the assessment method) for the time series using the approved assessment method and estimate their uncertainty. Include retrospective analyses if possible (both historical and within-model) to allow a comparison with previous assessment results and projections, and to examine model fit.

No analytical assessment was available due to a lack of reliable aging methodology.

a. Include bridge runs to sequentially document each change from the previously accepted model to the updated model proposed for this peer review.

N/A

b. Prepare a backup assessment approach that would serve as an alternative for providing scientific advice to management if the analytical assessment were to not pass review.

The "Ismooth" (previously planBsmooth; Legault et al. in press; https://github.com/cmlegault/PlanBsmooth) backup approach used in the previous assessment was updated for this management track. This Ismooth approach re-scales the NMFS spring and fall BTS by their respective means (i.e., so each time series has mean equal to one), and averages the fall observation in year y with the spring

observation in year *y+1* to create a single time series for analysis. A LOESS-smooth is then applied to the combined time series, and a log-linear regression fit to the most recent three years of index predictions from the LOESS fit. The slope of the regression provides a direction and rate of change in the indices that is multiplied by recent catch to provide catch advice.

For this management track, neither the spring or fall BTS were conducted in 2020. The Ismooth approach can function normally with these missing values, but consideration was given to replacing the missing 2020 observations with the average of the observations from 2019 and 2021. To evaluate a preferred method, the Ismooth approach was repeatedly applied with 10 different terminal years (2010-2019), and the multipliers compared between using all data, having a missing observation in the year before the terminal year, or replacing the observations in the year before the terminal year with the mean of the surrounding years. This entire analysis was also repeated using only the fall BTS because it is considered more reliable than the spring BTS and consideration was given in previous assessments to using only the fall BTS, as opposed to combining it with spring. In the North region using the spring and fall time series combined, the multipliers were similar and not significantly different from using all the data whether a missing value was present or imputed (Figures 17-18). In the South, however, the multipliers estimated in the presence of a missing value were often significantly lower than using the full data, but replacing the missing value with the surrounding average resolved the disparity (Figures 19-20). Regardless of management area or whether a missing value was present or imputed, using only the fall survey produced more imprecise estimates for the multipliers, and they were systematically different than the multipliers produced from using all data (Figures 21-24). Consequently, the preferred approach was to use a combined spring and fall BTS time series with the missing 2020 observations replaced with the mean of the 2019 and 2021 observations. Using this method, the multiplier was 0.829 in the North 0.646 in the South (Figures 25-26).

TOR 4. Re-estimate or update the BRP's as defined by the management track level and recommend stock status. Also, provide qualitative descriptions of stock status based on simple indicators/metrics (e.g., age-and size-structure, temporal trends in population size or recruitment indices, etc.).

Biological reference points are unavailable for these stocks and stock status is unknown. Survey length frequencies and indices of recruitment suggest increasing and above average recruitment in the North in recent years, but continued low or decreasing recruitment in the South (Figures 8-15). Thus, the stock in the Northern area seems relatively high and is likely to remain so, while abundance in the Southern area seems low and is also likely to remain so, if not continue to decline.

TOR 5. Conduct short-term stock projections when appropriate.

N/A

TOR 6. Respond to any review panel comments or SSC concerns from the most recent prior research or management track assessment.

Below is a list of the research topics included in the previous assessment (NEFSC 2020) and an update on progress.

- A benchmark assessment should consider the feasibility of using both observer and port samples in estimating length composition of commercial landings.
  - No progress
- Ongoing research on age and growth of monkfish may lead to an acceptable growth curve, even if not an aging method that could be used for routine aging. If so, age structured models could be explored assuming static growth.

  - Finding a routine aging method seems unlikely. The growth and maturity characteristics of monkfish, however, make attempts at delay-difference type models likely worth trying.

- A better understanding of monkfish movements and stock structure would be helpful to interpretation of monkfish population data.
  - No progress

- Future modeling efforts may want to consider the possible role of cannibalism in stock dynamics of monkfish in light of the strong negative relationship observed in the north between median size of monkfish in the population and recruitment indices.
  - No progress

References

Legault, C.M., Wiedenmann, J., Deroba, J.J., Fay, G., Miller, T.J., Brooks, E.N., Bell, R.J., Langan, J.A., Cournane, J.M., Jones, A.W., and Muffley, B. In press. Data Rich but Model Resistant: An Evaluation of data- limited methods to manage fisheries with failed age-based stock assessments. Canadian Journal of Fisheries and Aquatic Sciences.

Miller, T. J., Richardson, D. E., Politis, P. J., Manderson, J. P, Roebuck, C. D., Martin, M. H., Jones, A. W. In review. Estimation of survey efficiency and biomass for commercially important flatfish species from industry-based paired gear experiments. Fisheries Research.

NEFMC (New England Fishery Management Council). 1998. Monkfish Fishery Management Plan, Supplement 1. https://s3.amazonaws.com/nefmc.org/MonkForPDF.FMP.pdf

NEFSC (Northeast Fisheries Science Center). 2020. Operational assessment of the black sea bass, scup, bluefish, and monkfish stocks, updated through 2018. NEFSC Ref Doc 20-01; 160 p. Available from: http://www.nefsc.noaa.gov/publications/

NMFS (National Marine Fisheries Service). 2014. Standardized Bycatch Reporting Methodology: An Omnibus Amendment to the Fishery Management Plans of the Mid-Atlantic and New England Regional Fishery Management Councils. https://s3.us-east-1.amazonaws.com/nefmc.org/SBRM-Omnibus-Amendment.pdf

Weissman, A., Knoteck, R., Mandelman, J., Rudders, D., Roman, S., and Sulikowski, J. 2021. Determining discard mortality of monkfish in a sea scallop dredge fishery. North American Journal of Fisheries Management 41: 856-870.

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Susan Wigley, Leonaa Burgess, and the StockEff team contributed analyses and data preparation that made completing this management track assessment more efficient and timely than it otherwise would have been.

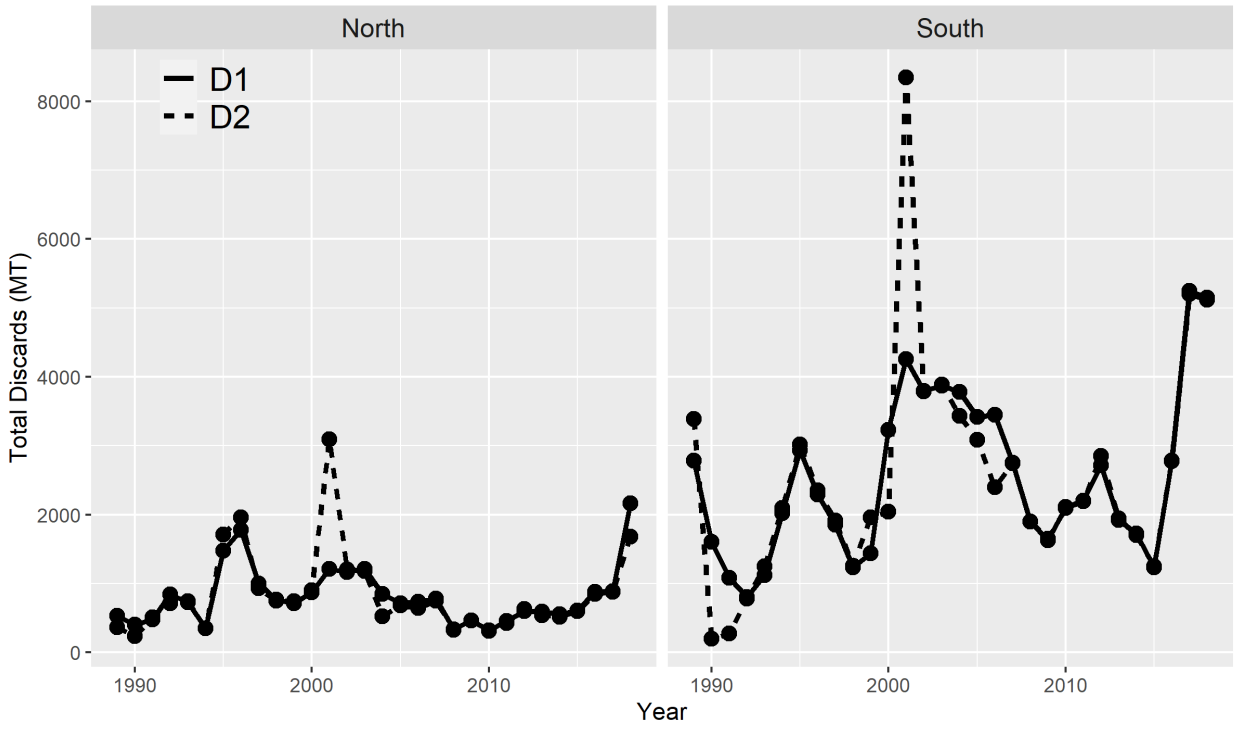


Figure 1: Time Series of total monkfish discards with some observations manually deleted and using a simple ratio estimator (D1) as in the previous assessment, and the time series with no observations deleted and using a combined ratio estimator (D2)

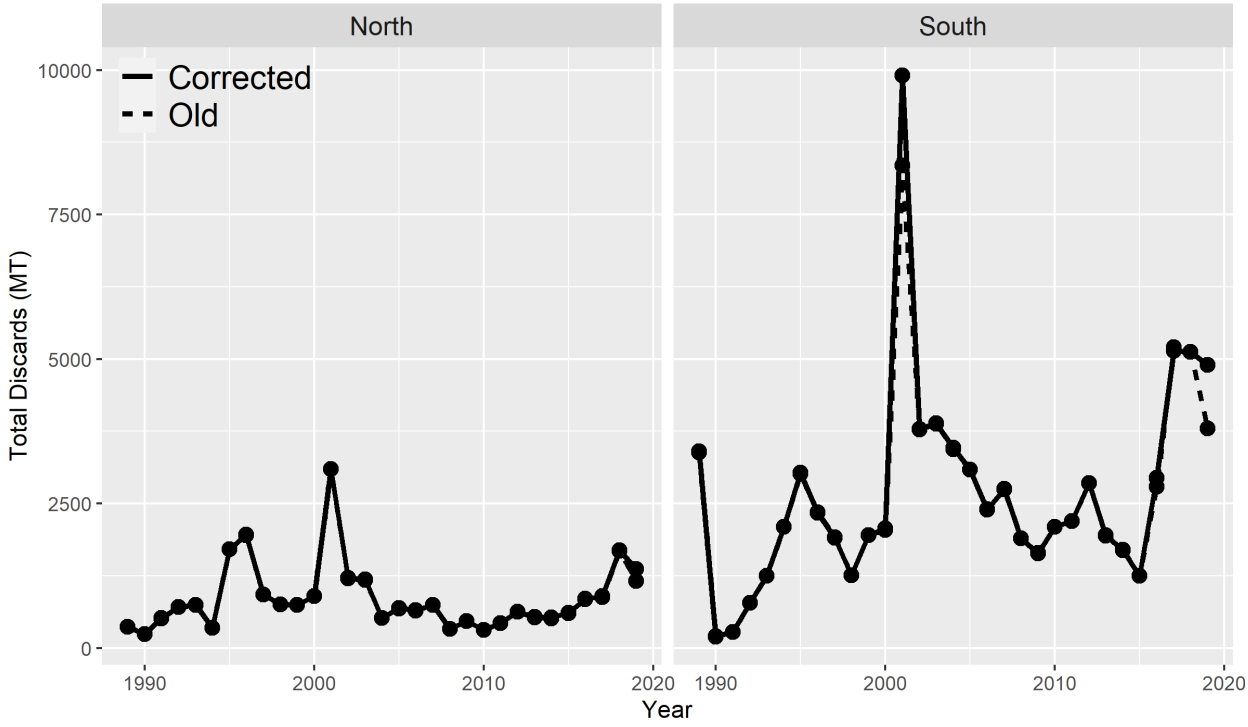


Figure 2: Time Series of total monkfish discards using the incorrect statistical area definitions (Old) and with the areas corrected.

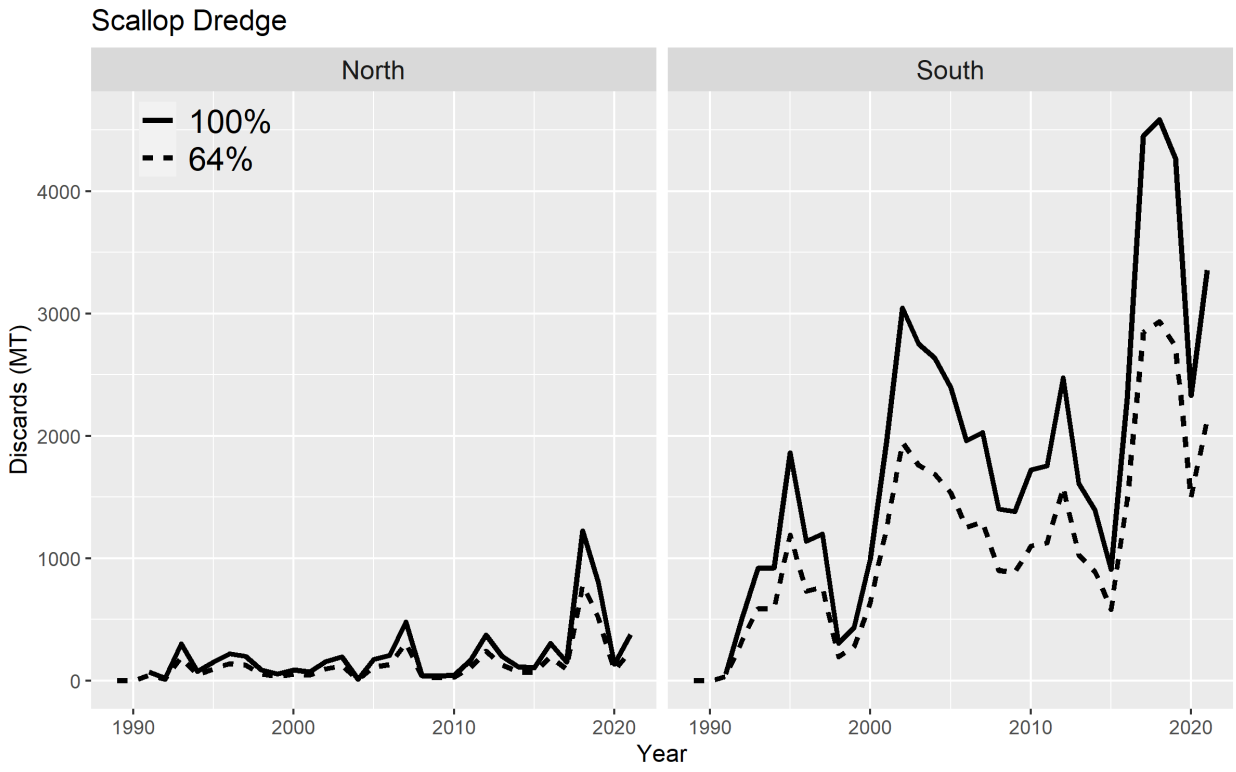


Figure 3: Scallop Dredge monkfish discards using a mortality rate of 100percent or 64percent

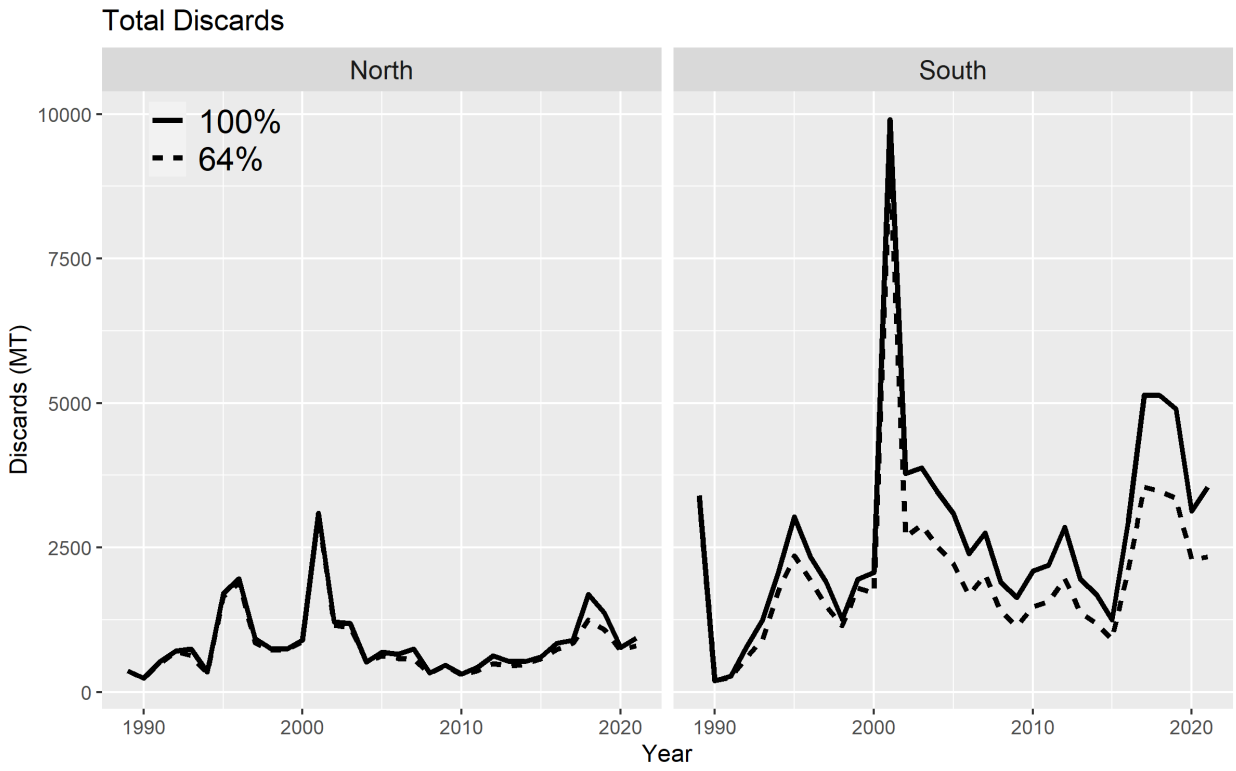


Figure 4: Total discards using a discard mortality rate of 100percent or 64percent for the scallop dredge fleet.

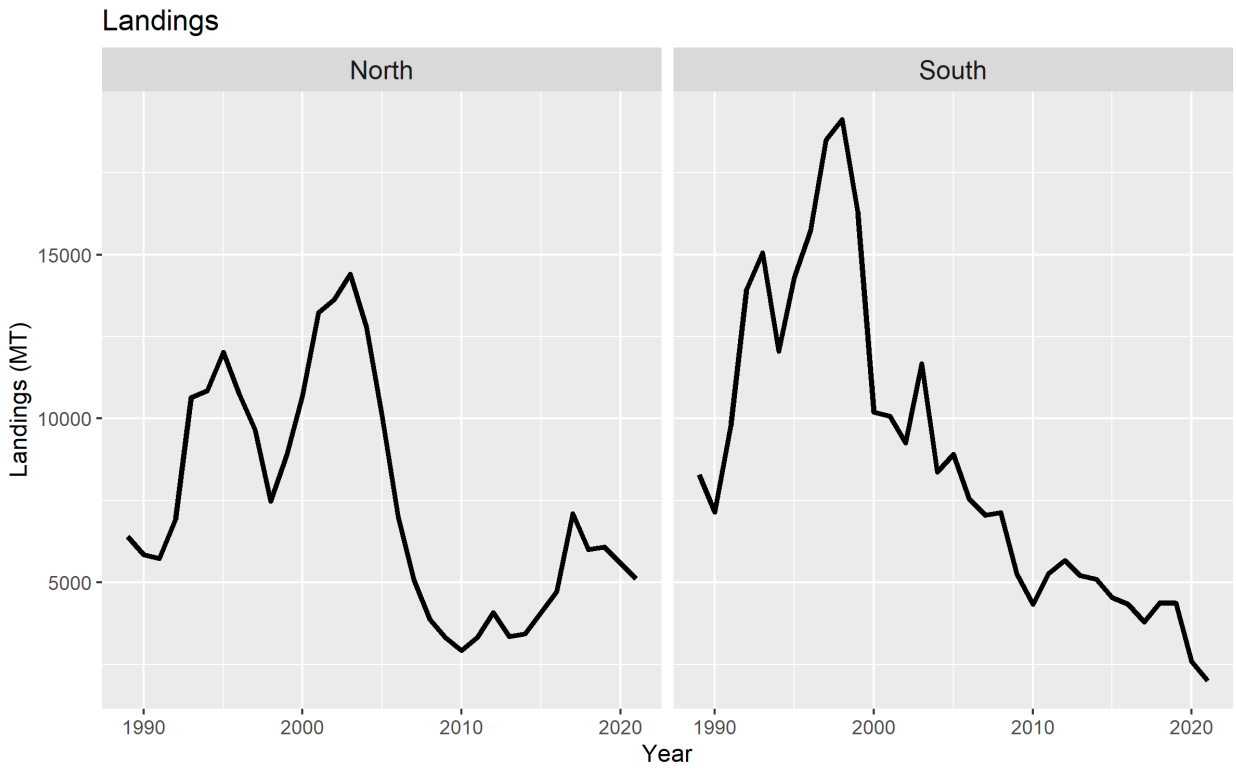


Figure 5: Total monkfish landings.

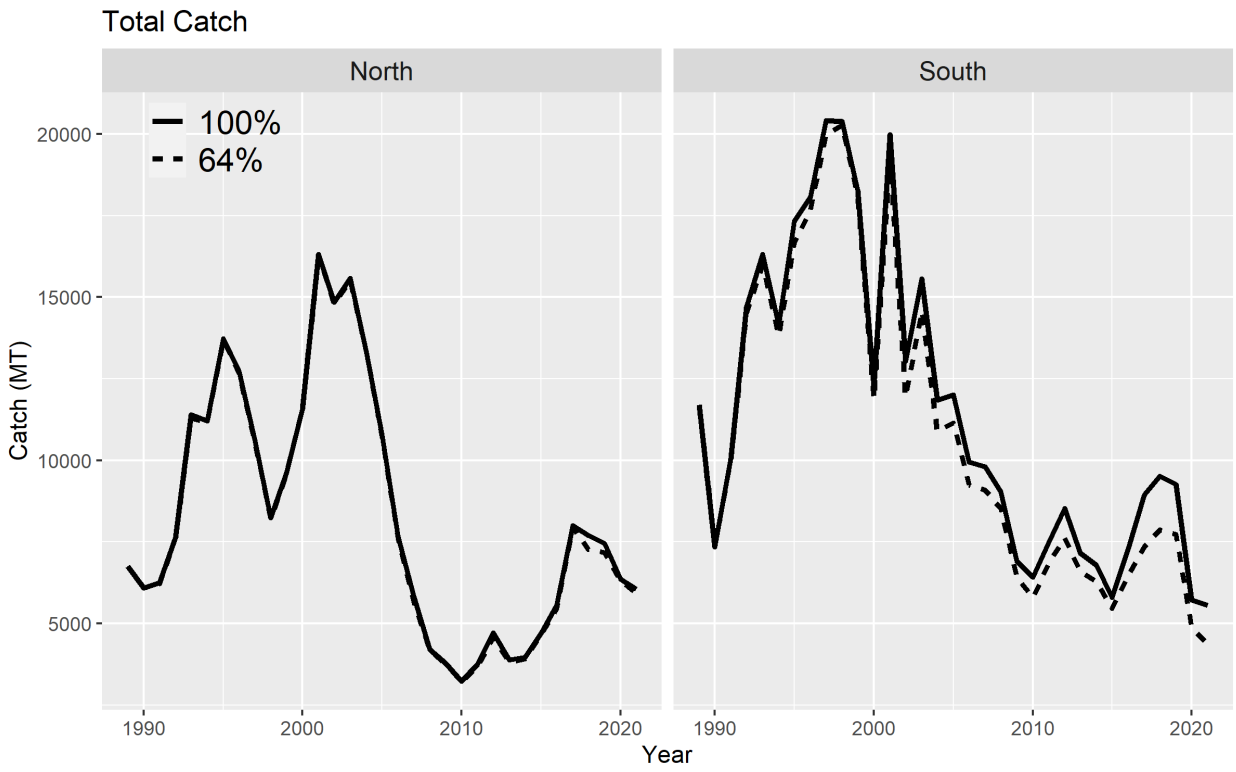


Figure 6: Total monkfish catch (landings and discards) using a discard mortality rate of 100percent or 64percent for the scallop dredge fleet.

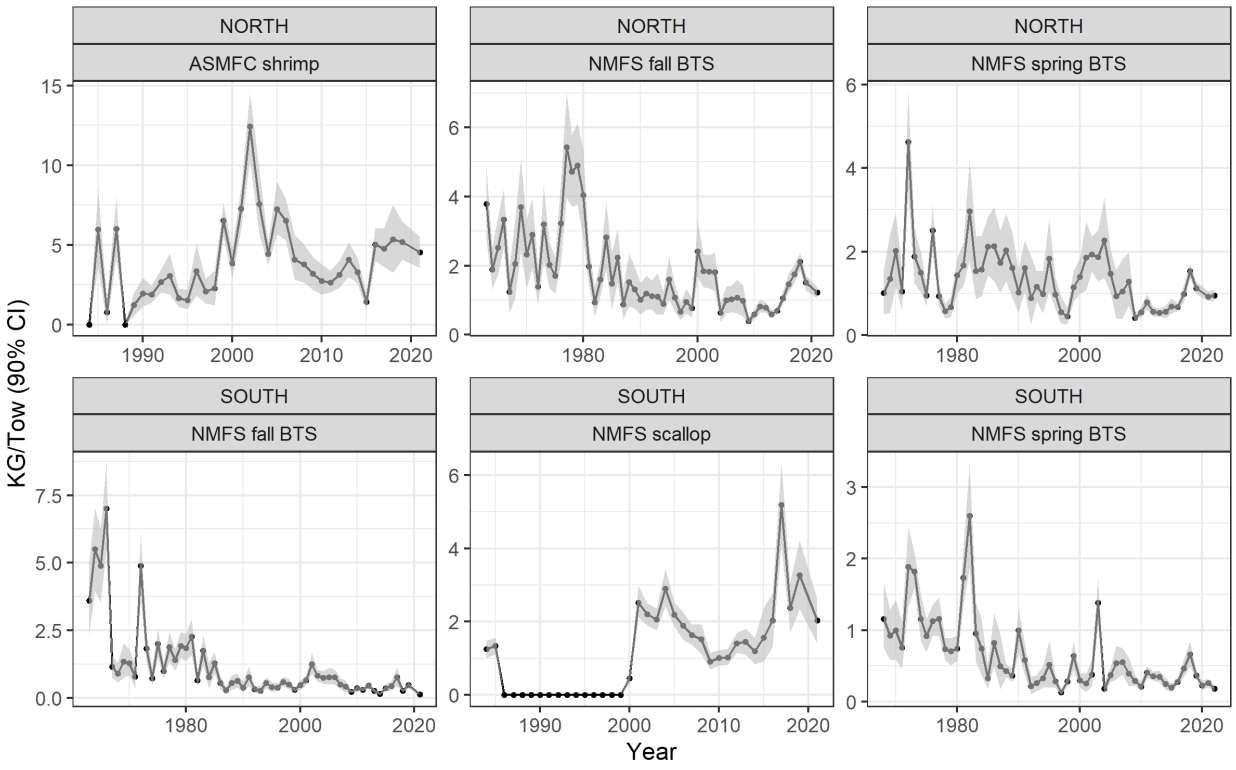


Figure 7: Survey Indices of Abundance.

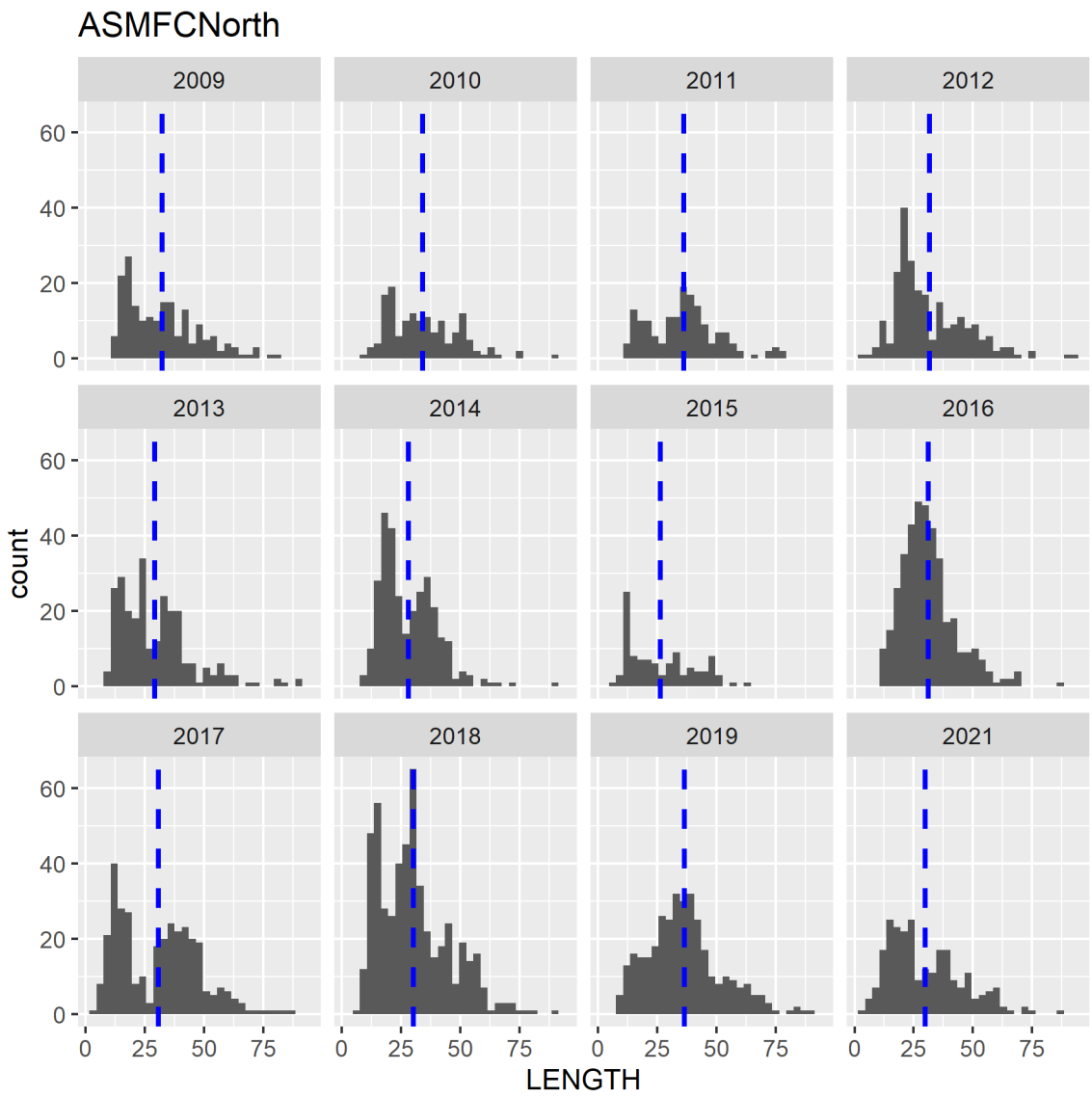


Figure 8: ASMFC survey length frequency in the North. The vertical, dashed, blue line is the mean.

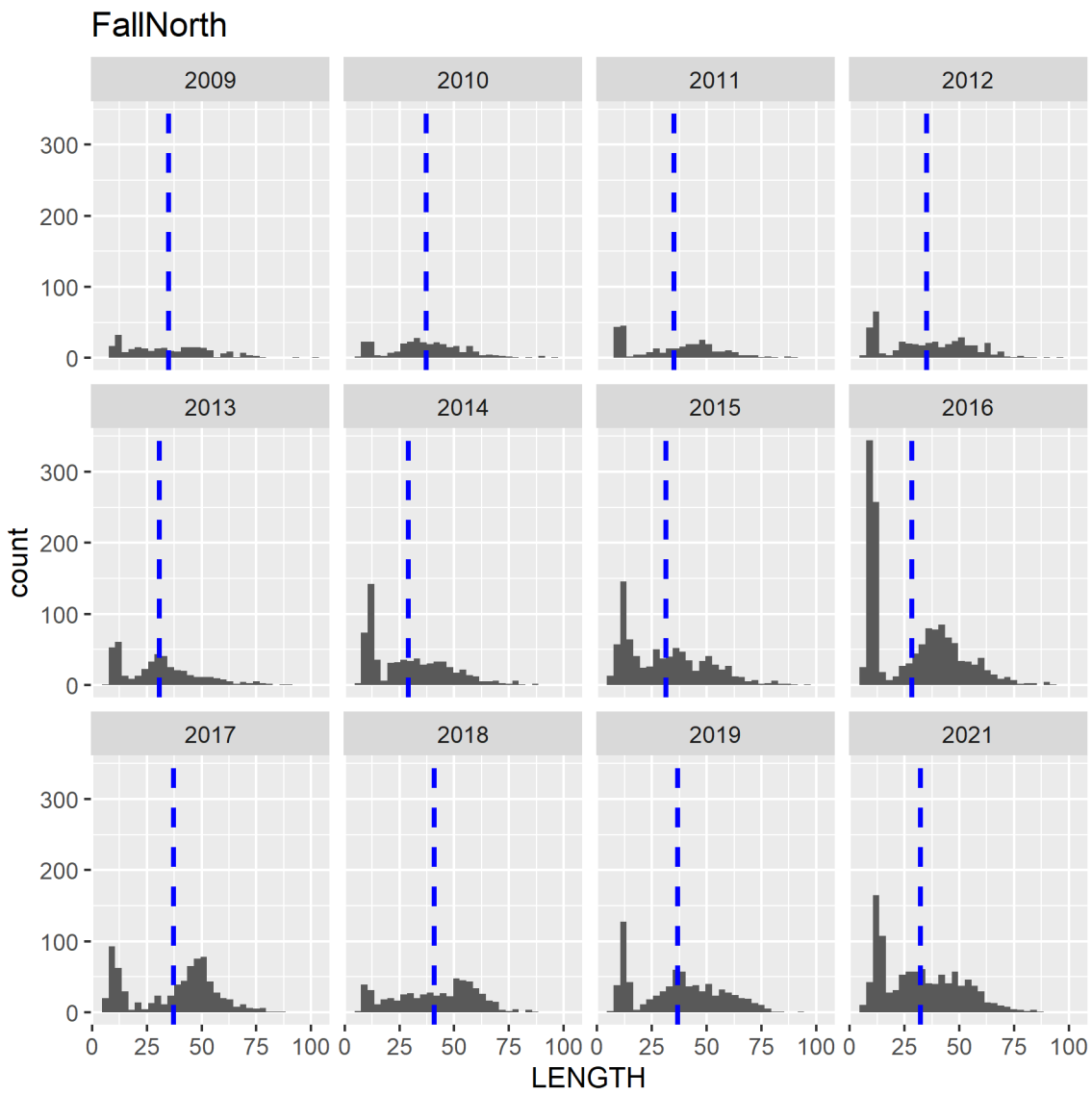


Figure 9: NMFS fall BTS length frequency in the North. The vertical, dashed, blue line is the mean.

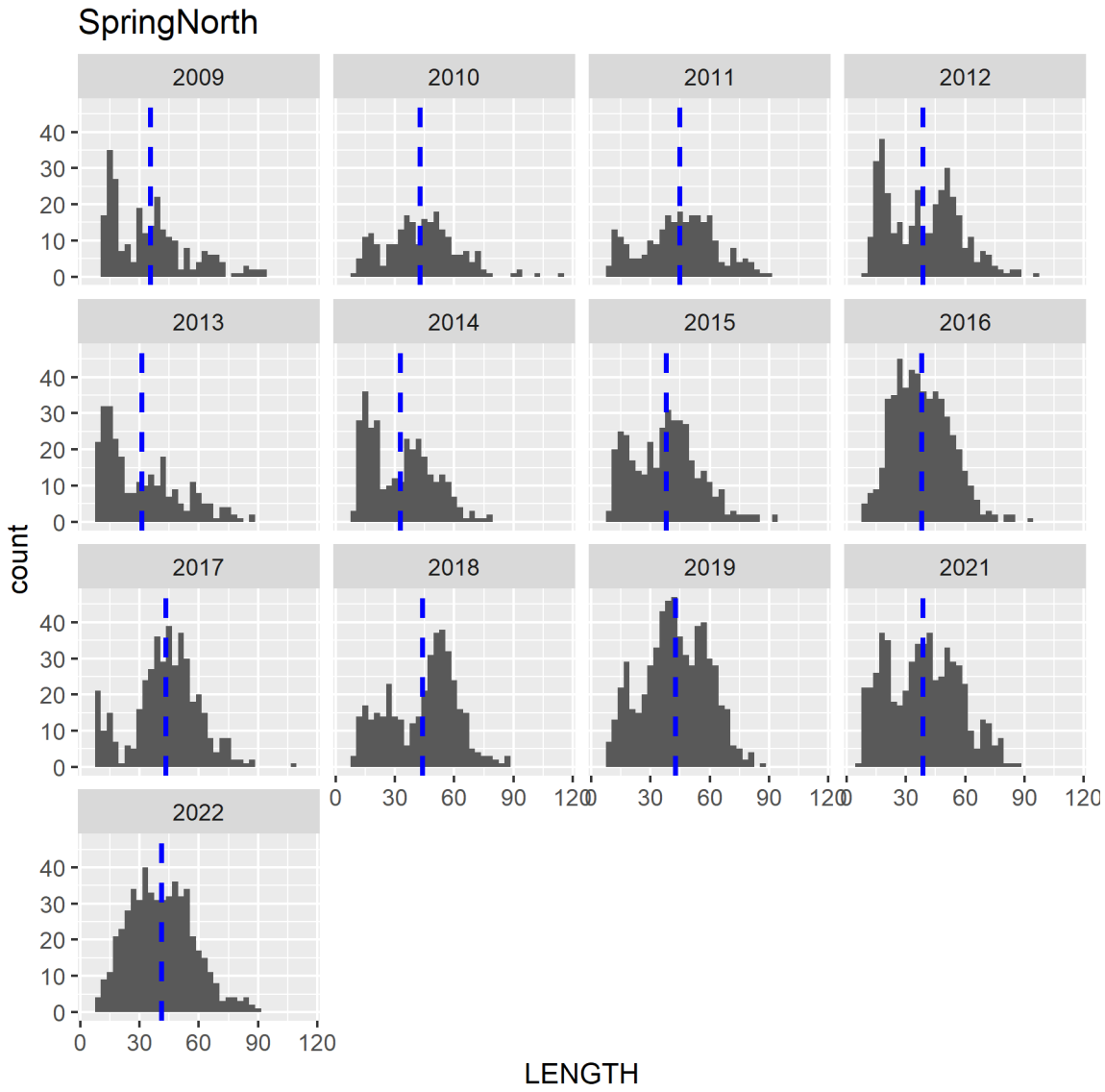


Figure 10: NMFS spring BTS length frequency in the North. The vertical, dashed, blue line is the mean.

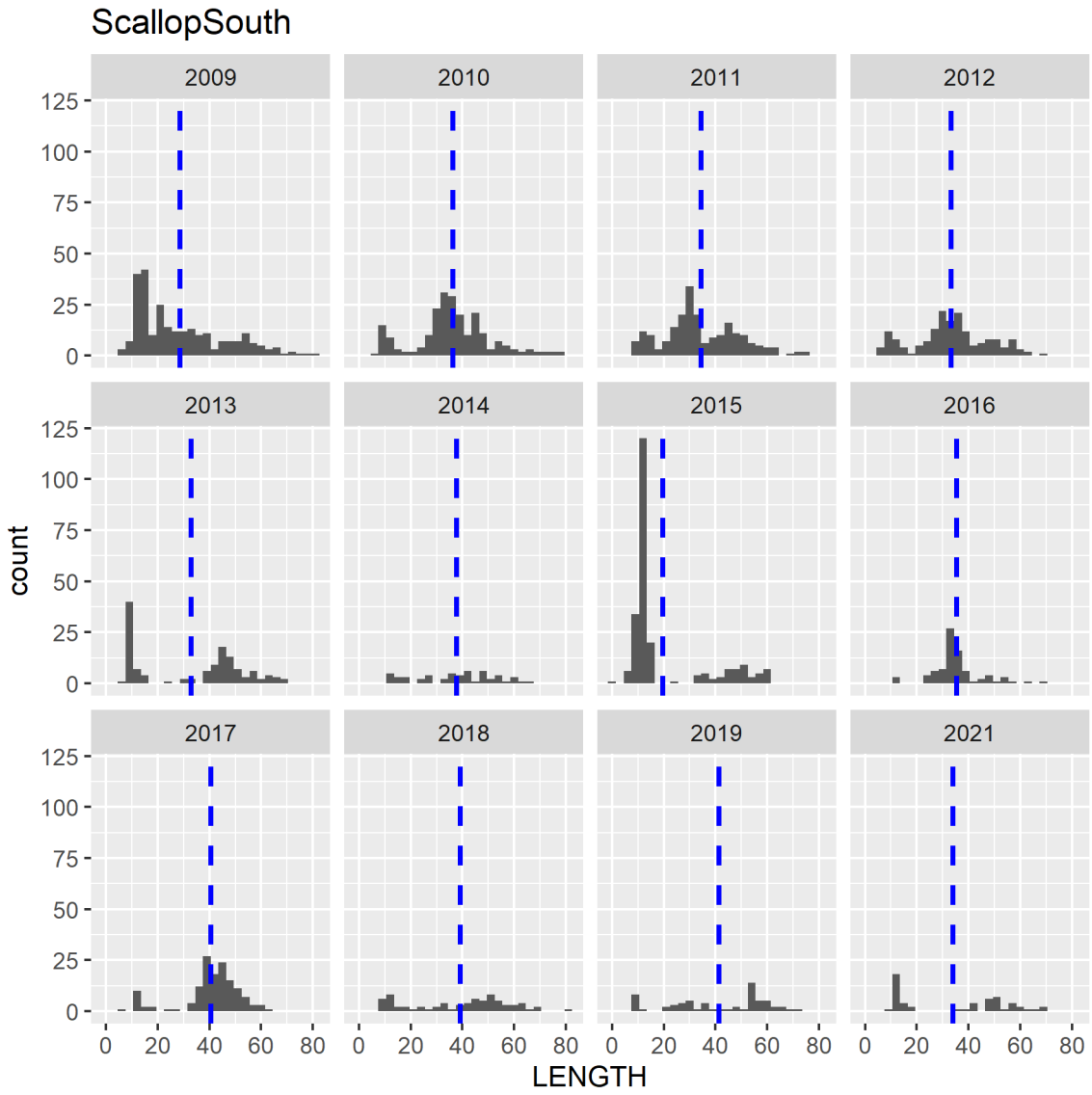


Figure 11: Scallop survey length frequency in the South. The vertical, dashed, blue line is the mean.

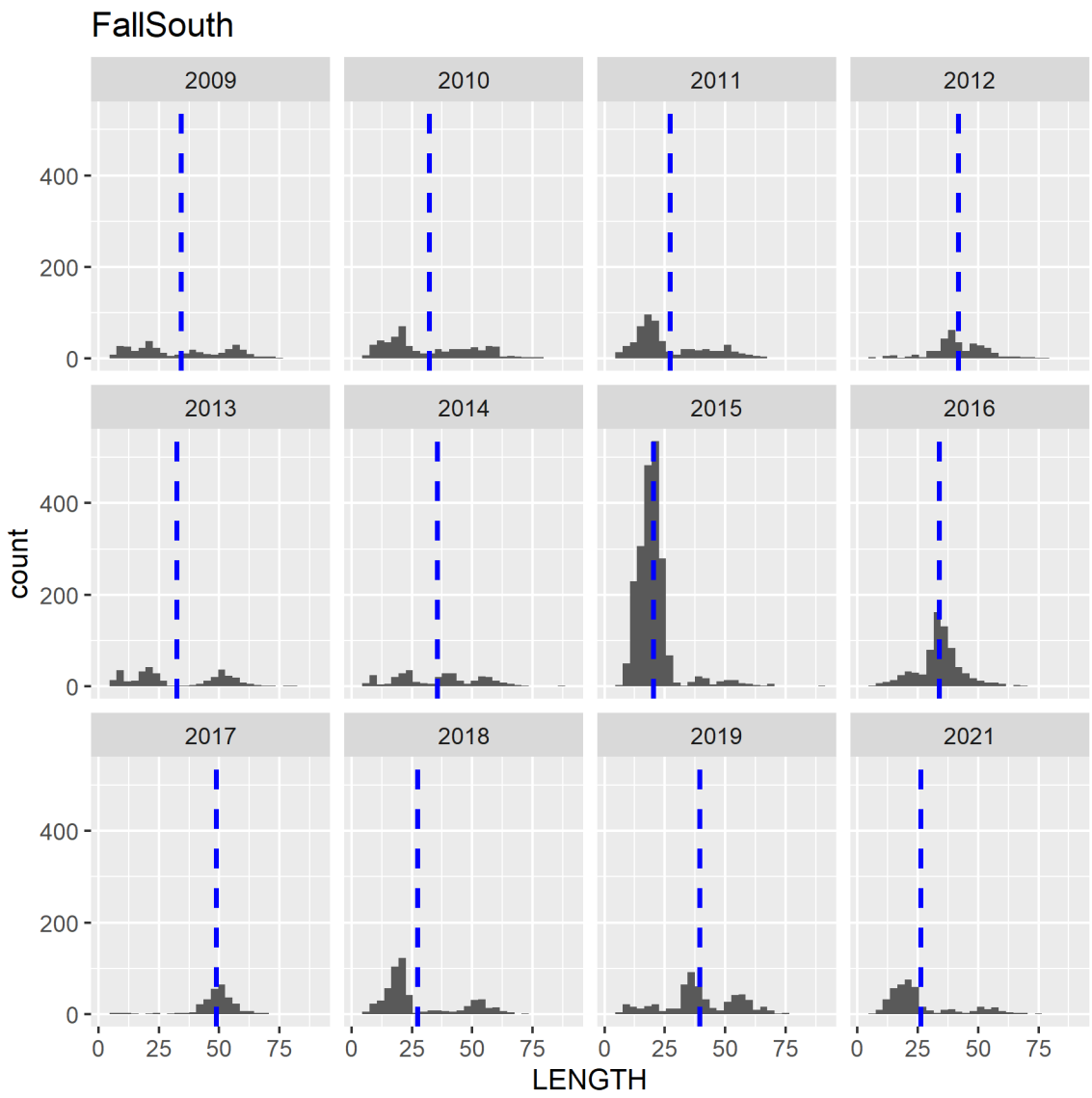


Figure 12: NMFS fall BTS length frequency in the South. The vertical, dashed, blue line is the mean.

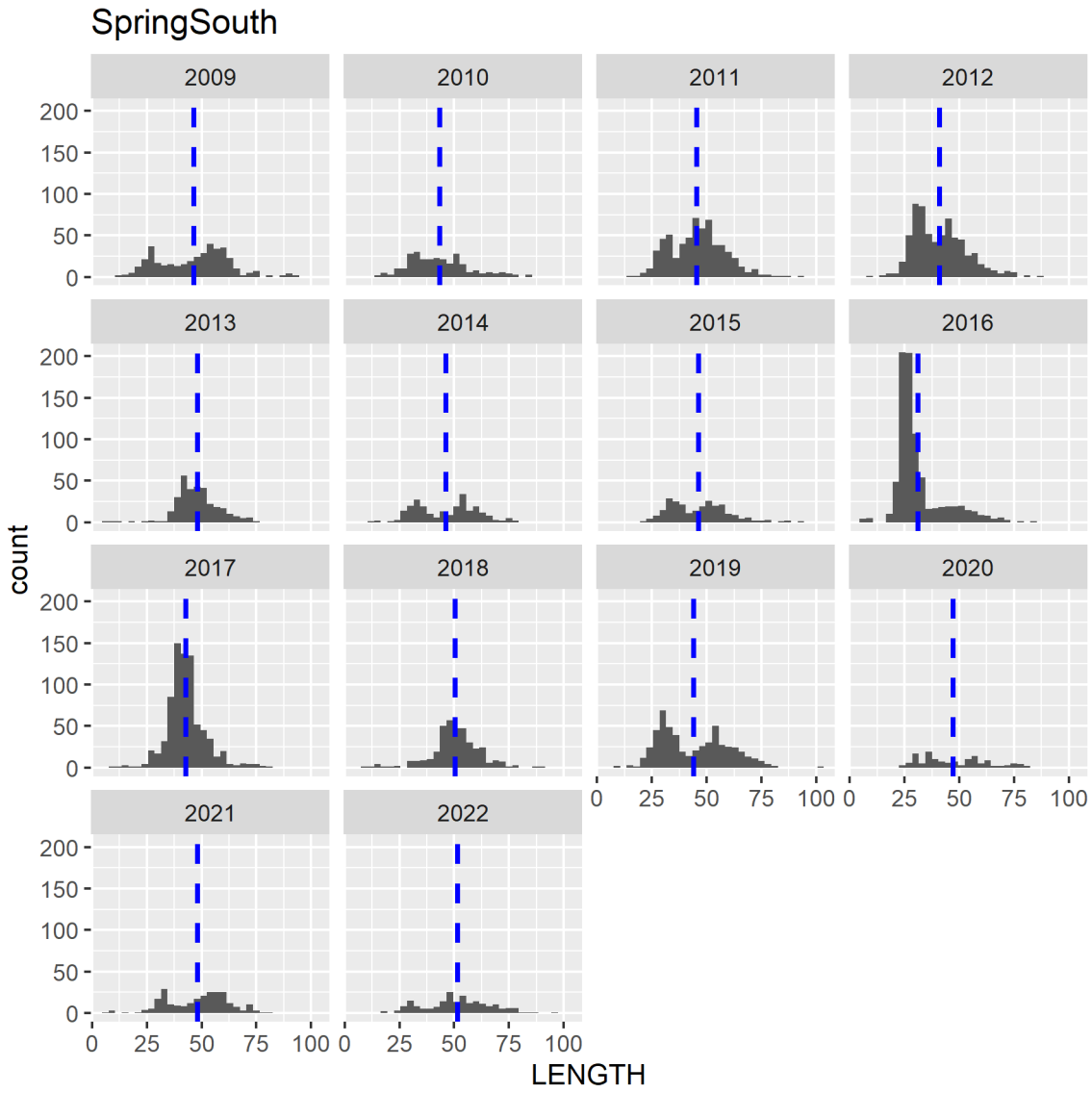


Figure 13: NMFS spring BTS length frequency in the South. The vertical, dashed, blue line is the mean.

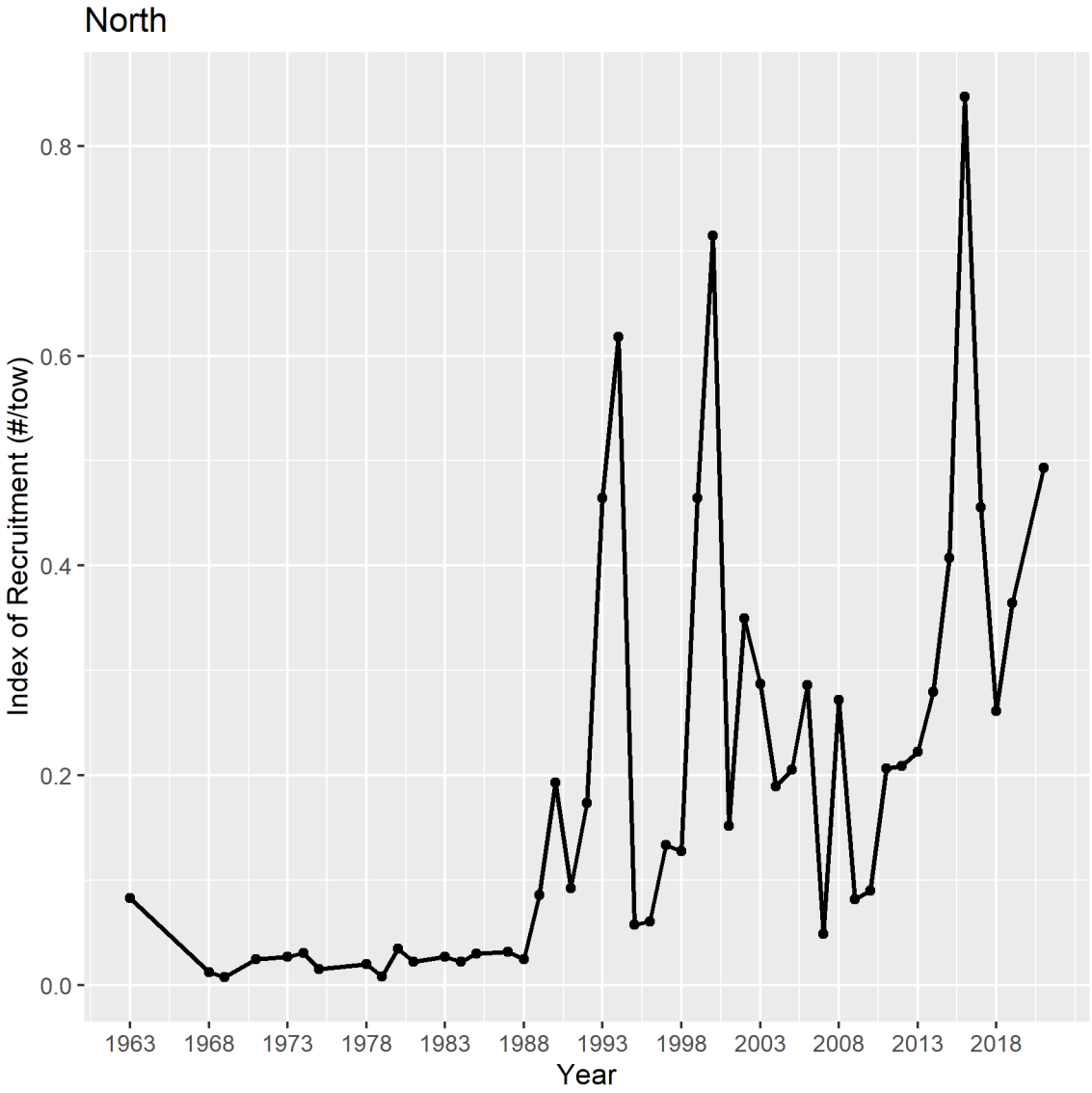


Figure 14: Northern monkfish age-0 recruitment indices of abundance from the NMFS fall BTS.

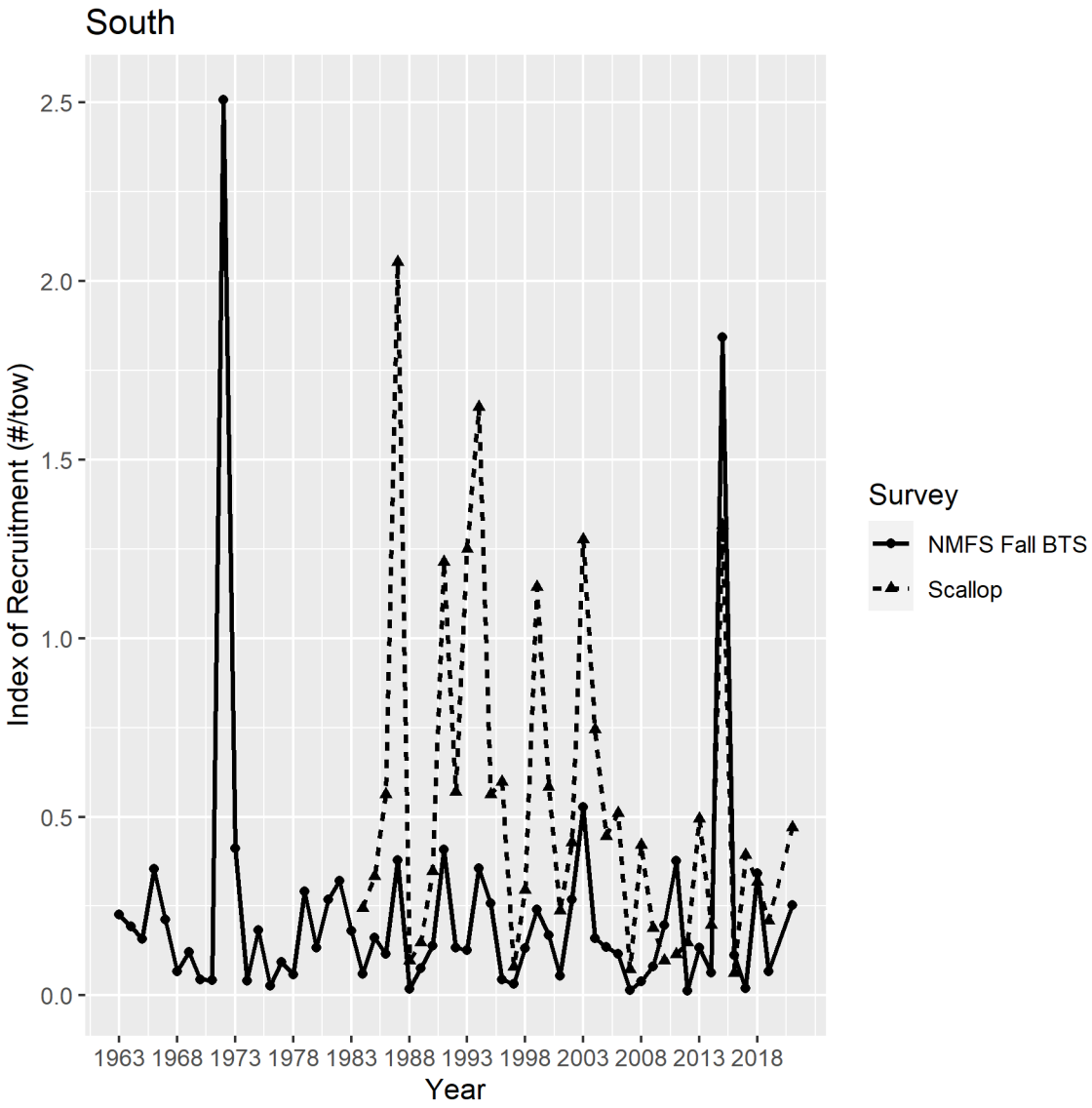


Figure 15: Southern monkfish age-0 recruitment indices of abundance.

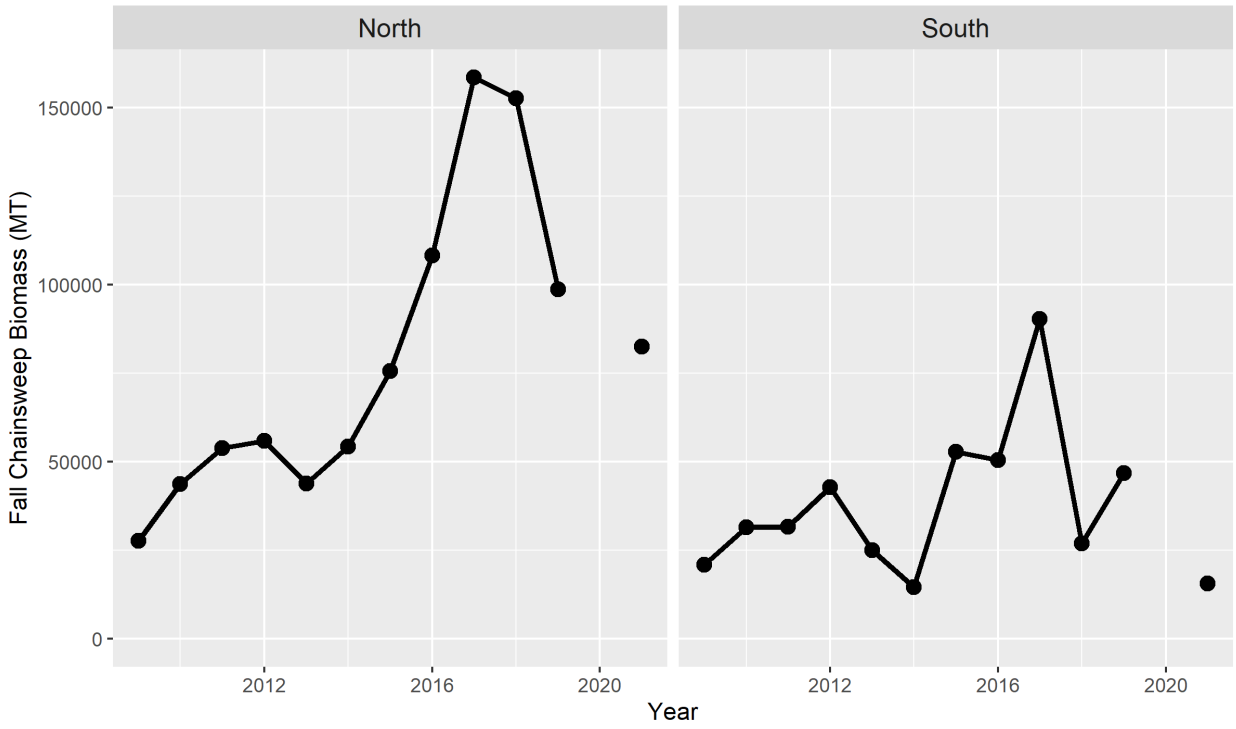


Figure 16: Measure of absolute monkfish biomass based on paired chainsweep and rockhopper sweep for the NMFS fall BTS.

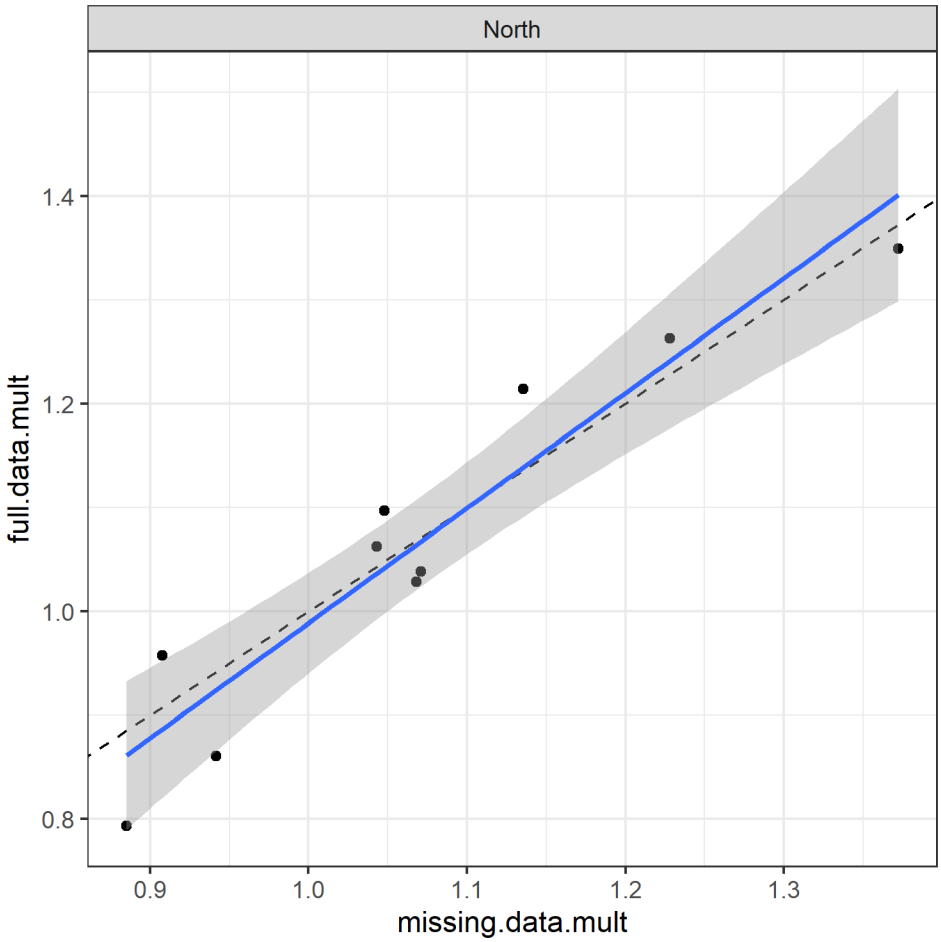


Figure 17: Ismooth applied to data from the North with 10 different terminal years using all data (full.data.mult) and with the year before the terminal year missing (missing.data.mult).

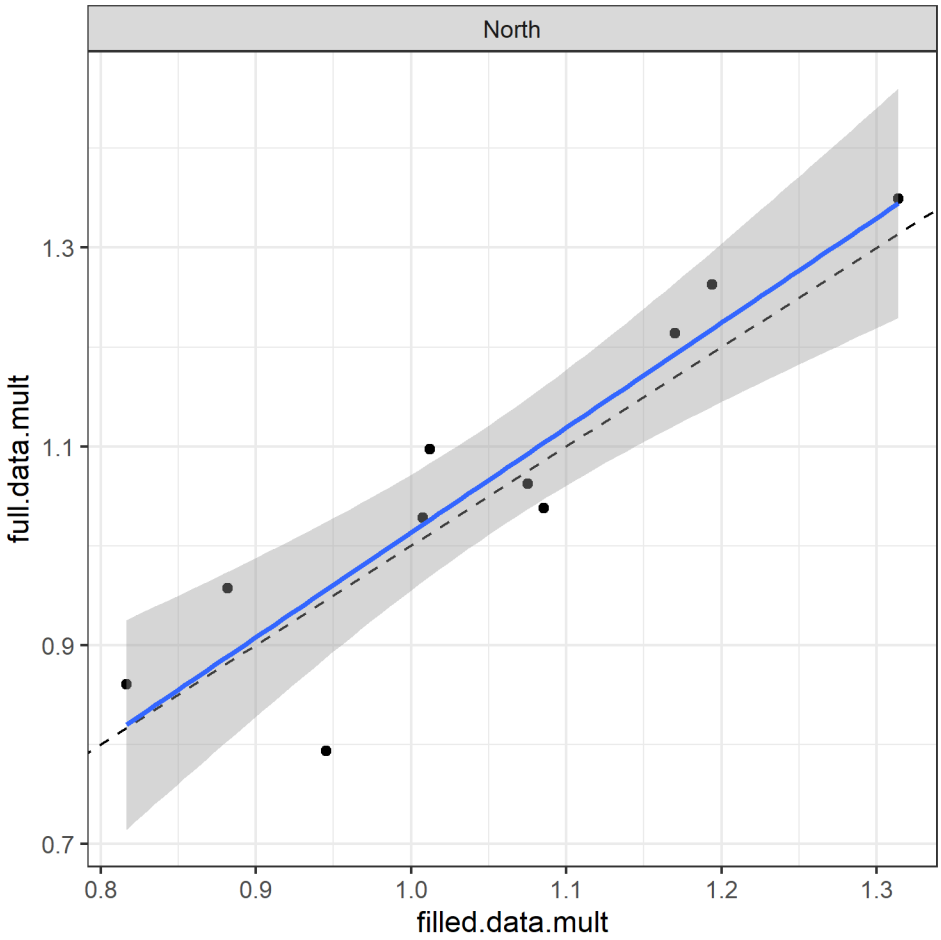


Figure 18: As in Figure 17 except with the missing value imputed using the mean of the surrounding years (filled.data.mult).

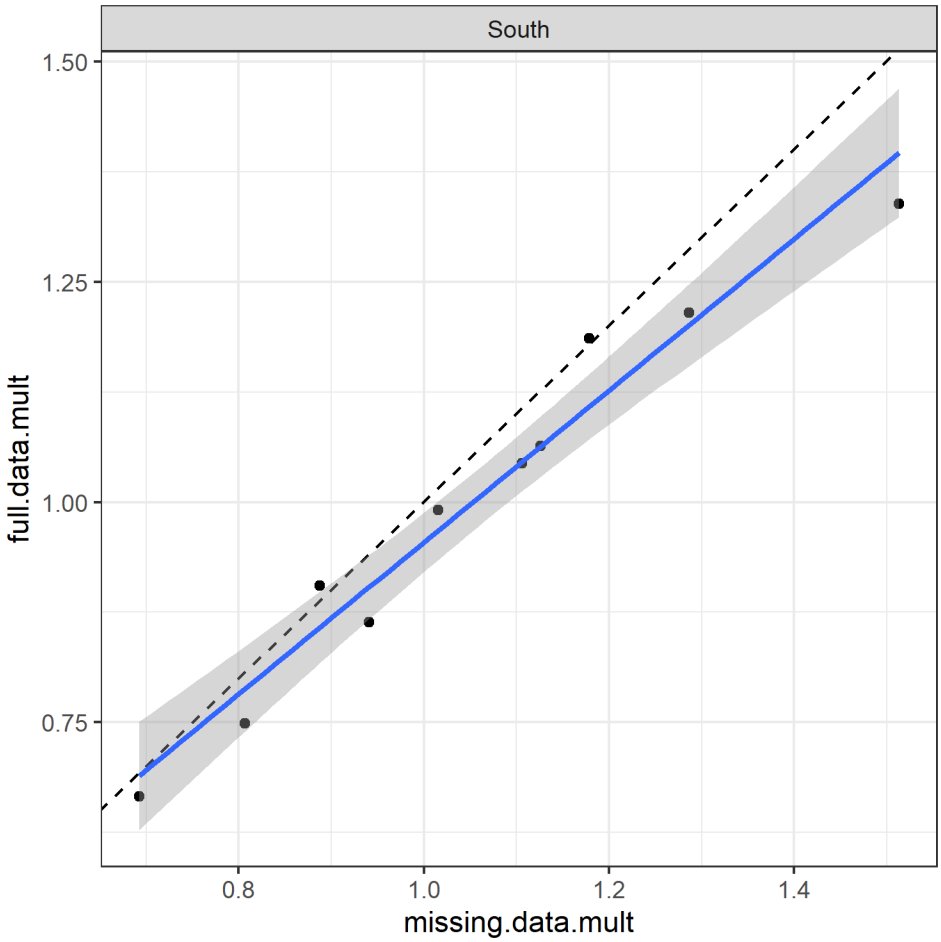


Figure 19: As in Figure 17 except for the South.

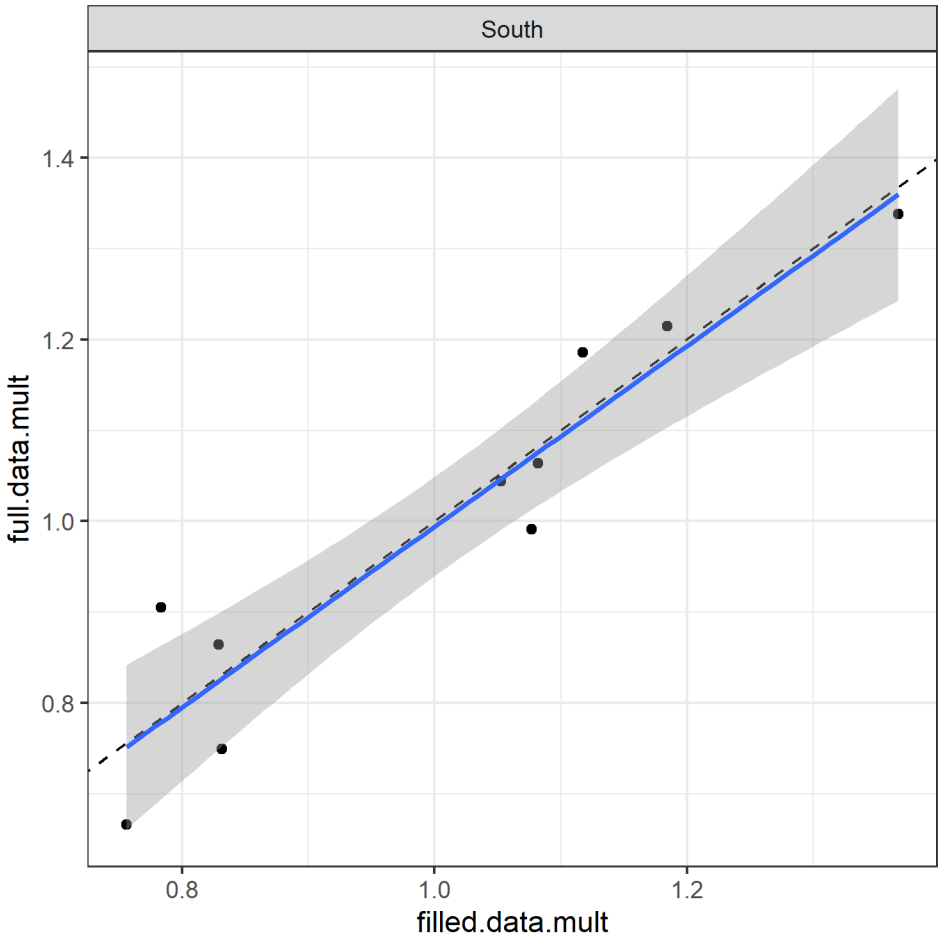


Figure 20: As in Figure 18 except for the South

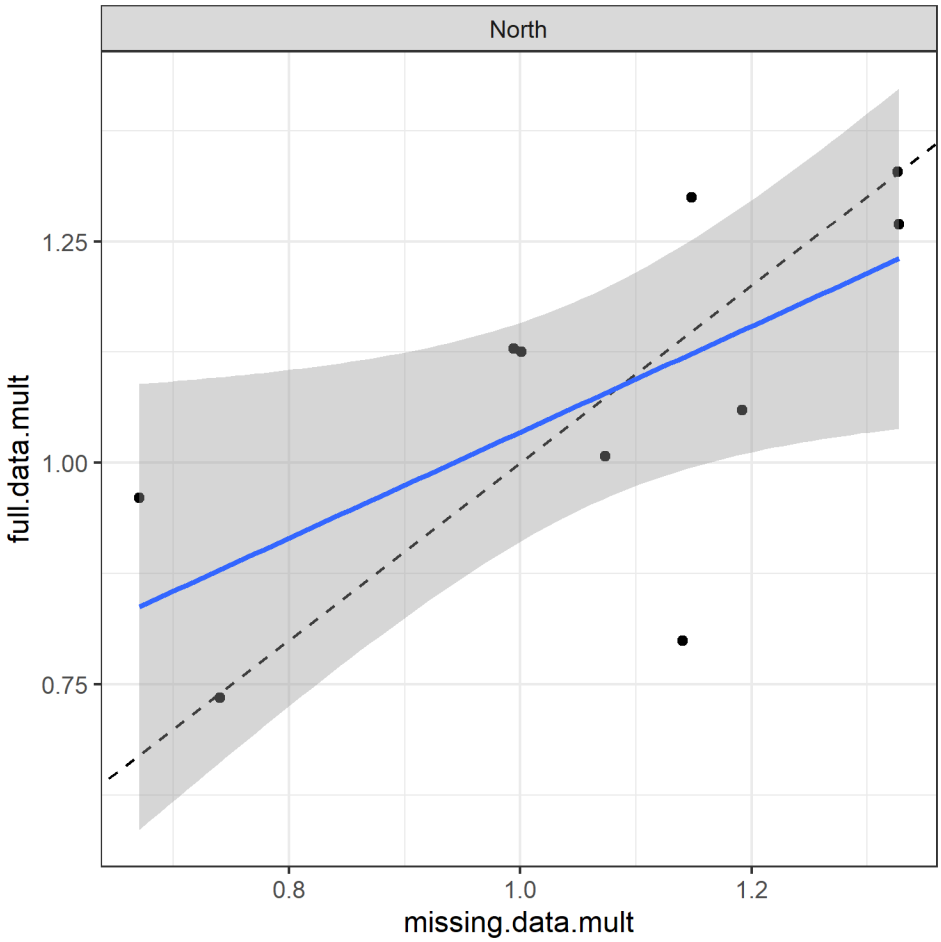


Figure 21: As in Figure 17 but using only the fall survey.

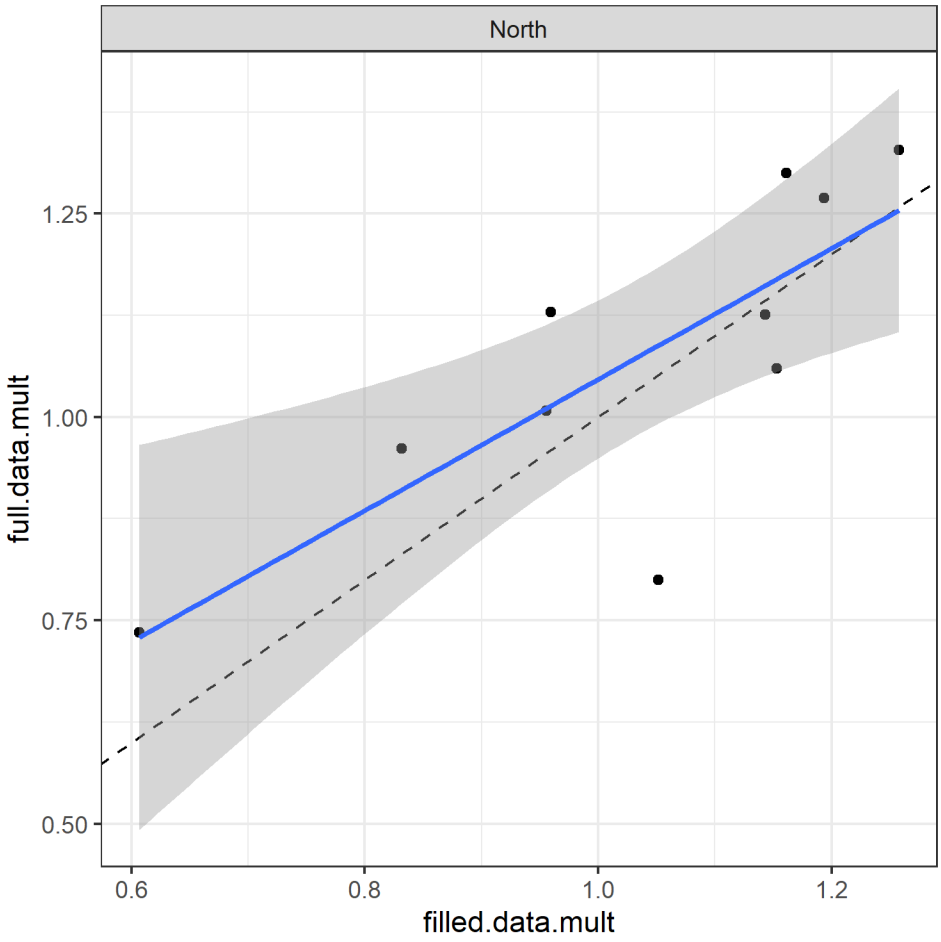


Figure 22: As in Figure 18 but using only the fall survey.

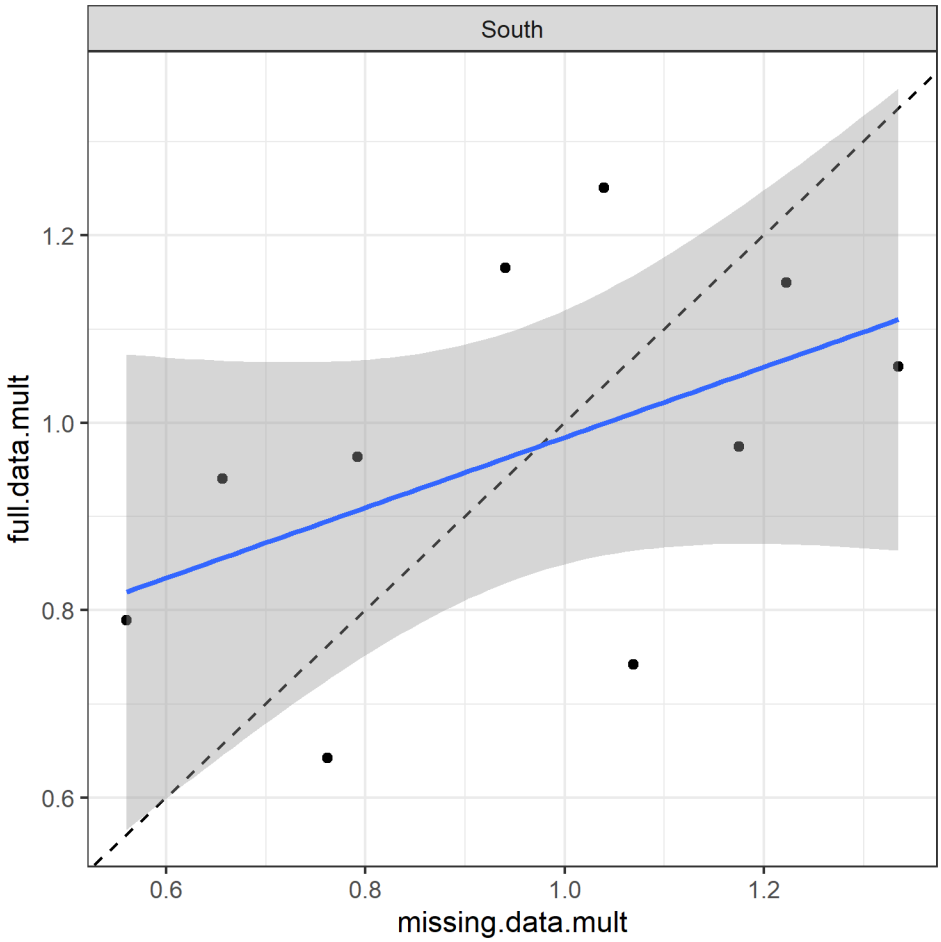


Figure 23: As in Figure 19 but using only the fall survey.

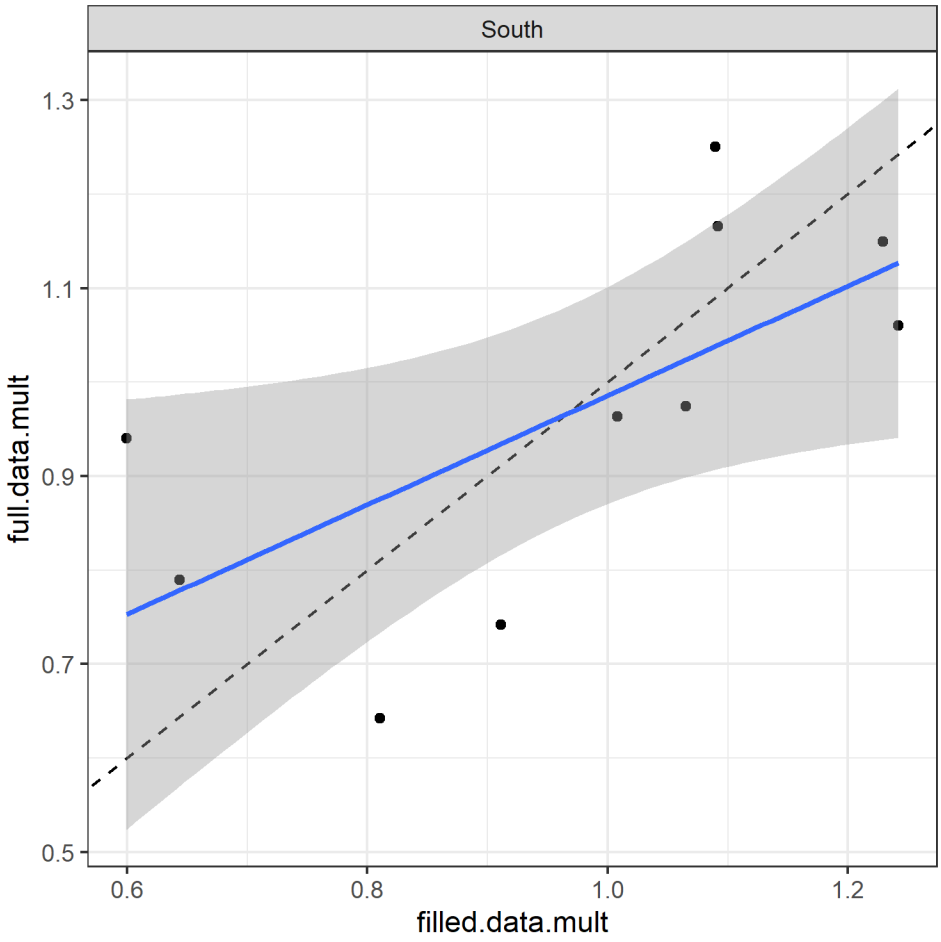


Figure 24: As in Figure 20 but using only the fall survey.

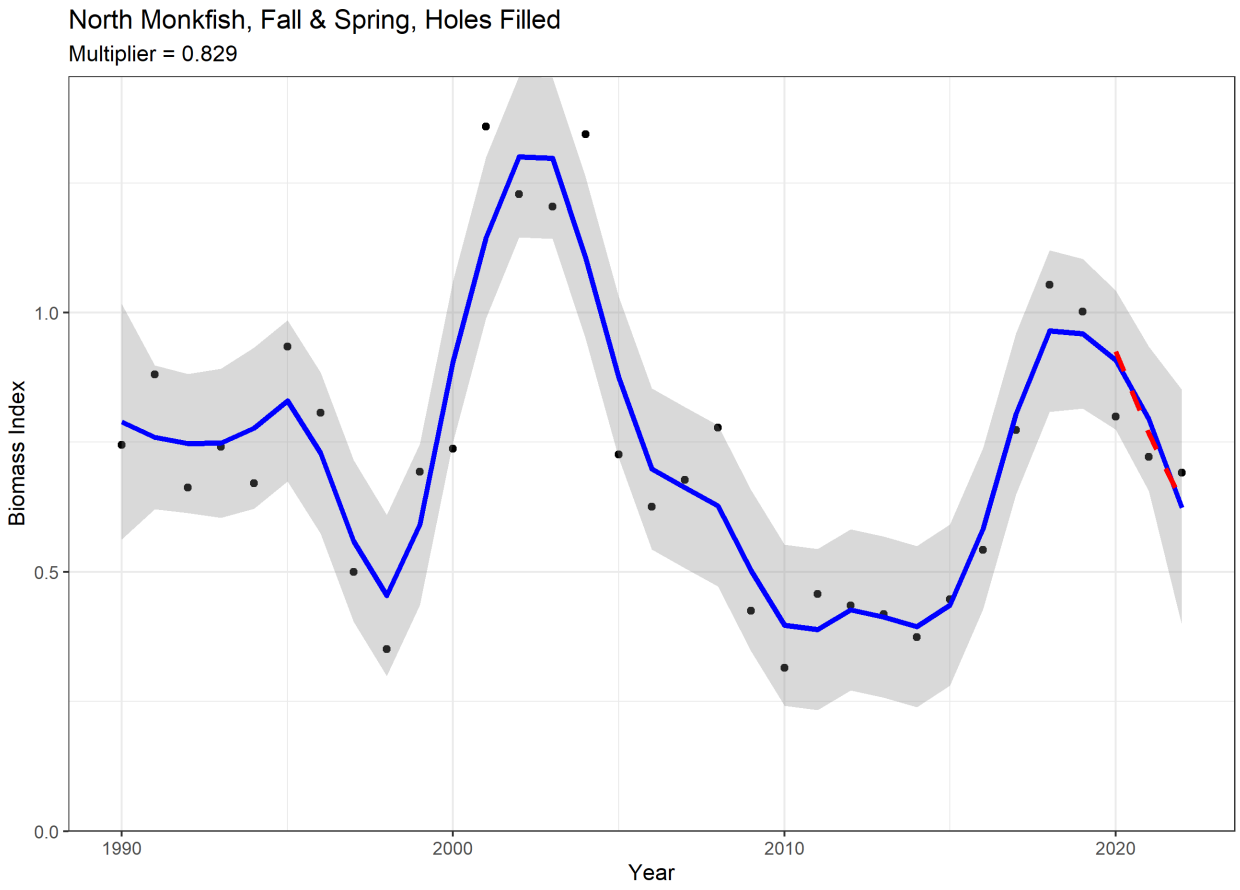


Figure 25: Results of the Ismooth approach in the North.

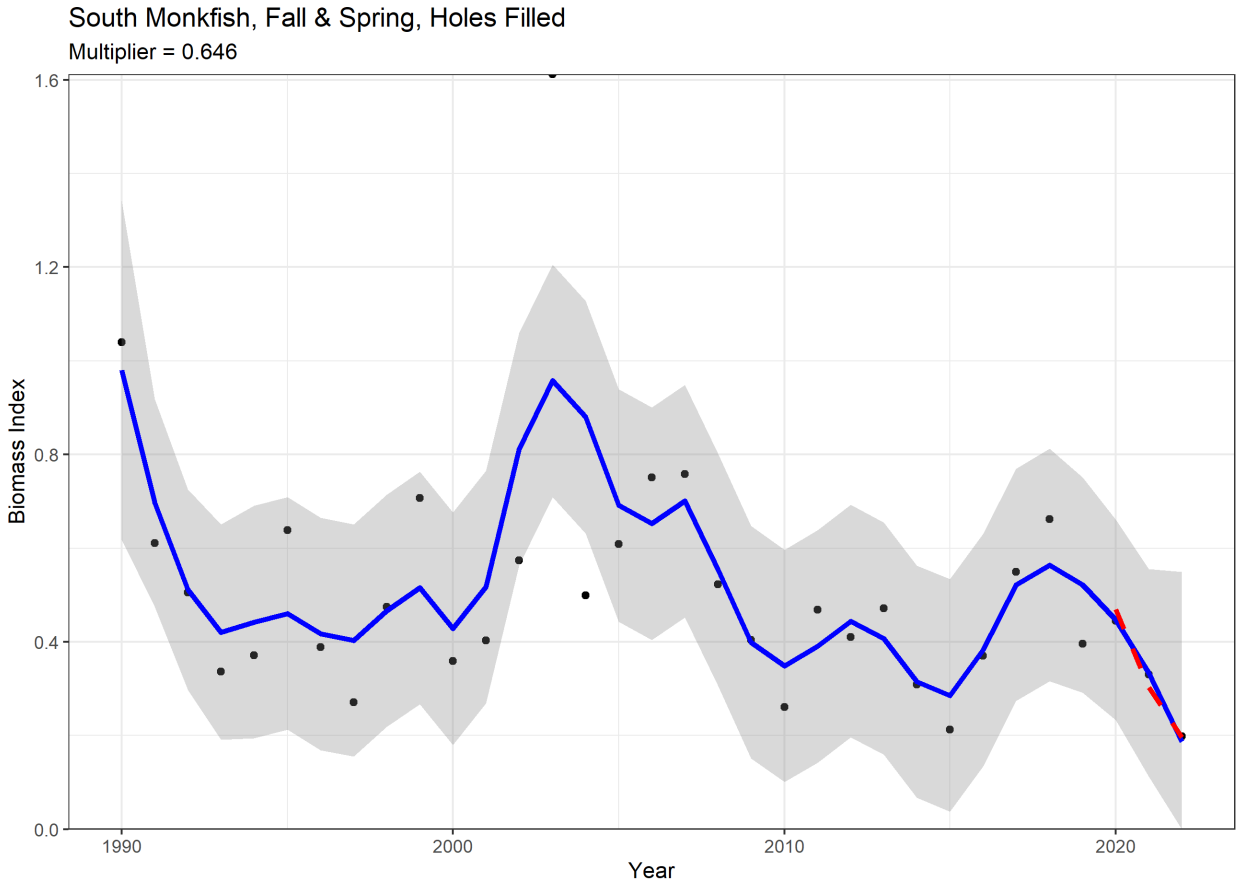


Figure 26: Results of the Ismooth approach in the South.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 2, 2022

To: Council

From: Karson Cisneros, Staff

Subject: Protected Resources Updates

On Wednesday, December 14, the Council will receive an update on issues discussed at the November 14, 2022 Protected Resources Committee meeting and recent Atlantic Large Whale Take Reduction Team (team) meetings on November 14-18 and December 1-2. The Council will also discuss the Sturgeon Bycatch Action Plan recommendations and the potential for a joint action with the New England Fishery Management Council. Materials listed below are provided for the Council's consideration of this agenda item.

1) Protected Resources Committee meeting summary from November 14, 2022
2) Staff memo to the Committee dated November 7, 2022*
3) Public comments received through December 2, 2022

In addition, the Action Plan to Reduce Atlantic Sturgeon Bycatch in Federal Large Mesh Gillnet Fisheries is provided on the Council meeting page as a supplemental information.

**Note: the staff memo was updated based on new information on November 21, after the Protected Resources Committee meeting and November ALWTRT meeting. These changes were minor and did not change any overall trends.*

Protected Resources Committee Meeting Summary

Monday, November 14, 2022

Committee Members in Attendance: Chris Batsavage (Chair), Sonny Gwin (Vice-Chair), Adam Nowalsky, Skip Feller, Ken Neill, Dewey Hemilright, LCDR Matt Kahley, Maureen Davidson, Sara Winslow

Other Attendees: Karson Cisneros (Council Staff), Wes Townsend (Council Vice-Chair), Greg DiDomenico (Lund's Fisheries), Colleen Coogan (NMFS), Jennifer Goebel (NMFS), Jason Didden (Council Staff)

Meeting Summary

The Mid-Atlantic Fishery Management Council's (Council, MAFMC) Protected Resources (PR) Committee met via webinar on Monday, November 14, 2022, and reviewed materials resulting from their data request to the Atlantic Large Whale Take Reduction Team (team) and discussed potential sets of measures. The team is tasked with reducing the risk of entanglement to right whales in U.S. East Coast fixed gear fisheries including gillnet, mixed species trap/pot, and lobster and Jonah crab trap/pot fisheries.

The Committee also briefly discussed potential ways to address the need for an action to reduce Atlantic Sturgeon bycatch in federal large mesh gillnet fisheries as outlined in the recently released Action Plan.

Atlantic Large Whale Take Reduction Plan

The Committee discussed data request results and related measures and acknowledged the tough decisions ahead for the team. A Committee member asked whether one buoy line on trap/pot gear is an option from December to May in the mid-Atlantic region and National Marine Fisheries Service (NMFS) staff responded that it is something that the team can model and discuss.

The Committee reviewed an industry proposal to the team focusing on mid-Atlantic gillnet measures to reduce entanglement risk. The Committee discussed that there are different types of gillnet fisheries throughout the mid-Atlantic region and these fisheries may need different types of mitigation measures. For example, a committee member was concerned that the sink gillnet fishery off the coast of North Carolina operates differently than anchored gillnet fishing further up the coast. They added that a potential requirement that one end of the gillnet be ropeless or use a pop-up buoy would not work for this tended fishery because gear is being set close together in deep water in a small area by different fishermen and a buoy at each end of the net is important to communicate where the gear is. This fishery typically has low soak times of less than three hours and is tended, with a fisherman fishing 1 to 3 nets and checking them frequently. The effort in this NC fishery has been decreasing in recent years given the variability

of the weather and production of fish. Because of this, NMFS staff discussed that this fishery likely presents very little risk.

The specific measures in the mid-Atlantic gillnet proposal were intended for implementation all year and at all depths, however it was discussed that North Carolina may need to be exempted from the one endline portion based on the nature of the fishery. The industry member who submitted the proposal added that part of the intent of the gillnet proposal was to consider reducing the risk to other large whale species under the plan.

The Committee also discussed the enforceability of measures that are based on target species and the Council's Coast Guard representative clarified that regulations by mesh size is what they would likely look for to enforce the discussed gillnet restrictions on the water. Given this, there is a chance that proposed measures by target species may get expanded to other target species that fall within the same mesh size.

The Committee also discussed all the different regulations under other take reduction plans, for example harbor porpoise and bottlenose dolphin. Any proposed measures would not be intended to increase risk or conflict with measures in those plans, which makes some modifications less feasible. One Committee member recommended that a summary of the regulations already in place from other plans be provided for fishermen to understand what should not be done. NMFS staff and another participant discussed that there are two cheat sheets available electronically (gillnet guides and trap/pot guides) or via hard copy.

Gear marking was also discussed as part of the upcoming measures to designate areas and better identify where the entanglement has occurred. The Committee discussed that gear marking could also be used to identify which fishery and regulations need to be complied with for enforcement. A Committee member added that two different colored buoys are used for each end of the gillnets in their fishery, and it is possible to put other markings if that would be helpful to describe what gear they are fishing.

The Committee also discussed the vertical net panel risk and how that is accounted for in the risk reduction measures. Staff described that vertical height is taken into account with respect to encounter rate, so the risk of an encounter with a whale increases with a higher net panel. However, there is no direct calculation of the area below the headline for risk.

Atlantic Sturgeon Action

The Committee discussed that the recommendation from the Sturgeon Action Plan is to reduce Atlantic sturgeon bycatch in federal commercial large mesh gillnet fisheries in the Greater Atlantic Region targeting Northeast multispecies, skate, monkfish, and/or spiny dogfish. They discussed that both the Mid-Atlantic and New England Fishery Management Councils (NEFMC) added a sturgeon action to their draft 2023 implementation plans in response to this recommendation.

The three paths discussed were 1) a joint action with the New England Council that only addresses monkfish and dogfish, 2) a joint omnibus action that considers monkfish, dogfish, NE

multispecies and skate, or 3) no Council action. If the third path is selected, NMFS has indicated they will develop measures to reduce Atlantic sturgeon bycatch for these fisheries through their rulemaking process.

The Committee discussed some logistics of a potential joint action including what kind of involvement the different committees may have. Staff discussed that the dogfish and monkfish species committees may be a good starting point given that they involve membership from both Councils. One member noted that it may be logistically more difficult to have a joint action that addresses some species that are only managed by the New England Council.

Another Committee member asked whether there is opportunity for interaction with the ASMFC through their Atlantic Sturgeon Board or Dogfish Board. They added that the Council does not have a Protected Resources Advisory Panel, however the ASMFC has a Sturgeon Advisory Panel which may be helpful.

Overall, the Committee recommended the following paths forward for the Council's consideration in December:

1. Joint action with the NEFMC on monkfish and dogfish
2. Joint omnibus action with the NEFMC that considers monkfish, dogfish, northeast multispecies and skate
3. Explore avenues to coordinate with the ASMFC

Public Comment

A member of the public commented that in New Jersey, some fishermen and others have been working on the sturgeon bycatch issue over a long period of time and the Council needs to make sure the tagging and observer data is thoroughly analyzed. They felt that the solutions would lie in some possible depth requirements and depth restrictions. They added that soak time is an important factor and most of the sturgeon are released alive and in relatively good shape. However, there are clear places, depths, and activities, that need to be focused in on. They also thanked the Committee and Council for the attention to the topic and are looking forward to finding solutions.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 7, 2022*

To: Protected Resources Committee

From: Karson Cisneros, Staff

Subject: Review of ALWTRT Process, Risk, and Mitigation in the Mid-Atlantic Region

**Note: this memo was updated on November 21, after the Committee meeting and November ALWTRT meeting with target risk reduction values of 88-93% (previously 90%) and more precise percentage breakdowns in Figures 1 and 2.*

The Protected Resources Committee will meet on November 14th, 2022 to review the results of the Committee's data request to the Atlantic Large Whale Take Reduction Team (team) and discuss potential measures. The Committee will provide feedback for the Council's representation on the team. This document provides summary and context for the data request results. As described in more detail below, this team is making final recommendations at their November and December 2022 meetings.

Background

NMFS and the Atlantic Large Whale Take Reduction Team (team) originally developed the Atlantic Large Whale Take Reduction Plan (plan) in 1997 to reduce the level of serious injury and mortality of three strategic stocks of large whales (North Atlantic right, humpback, and fin) in commercial gillnet and trap/pot fisheries and has modified the plan as needed since its establishment. NMFS has determined that additional risk reduction is needed in all East Coast gillnet and trap/pot fisheries regulated under the plan to meet the requirements of the Marine Mammal Protection Act (MMPA) and reduce the risk of mortalities and serious injuries to the endangered North Atlantic right whale.

A final rule implementing modifications to reduce mortalities and serious injuries caused by incidental entanglement in the Northeast American lobster and Jonah crab trap/pot fishery was published on September 17, 2021. These modifications were considered Phase 1 of recent plan modifications and were intended to achieve the minimum 60 percent target reduction in risk to North Atlantic right whales within the Northeast American lobster and Jonah crab trap/pot fisheries at the time.

Given new information since the 2021 modifications were initiated, the risk reduction estimated to be necessary to reduce mortality and serious injuries of right whales in U.S. commercial fisheries to below the Population Biological Removal level (PBR), as required by the MMPA, has increased to approximately an 88-93 percent risk reduction target. Further, in a recent summary judgment in the Center for Biological Diversity, et al., v. Raimondo, et al., the presiding judge ruled that the 2021 Final Rule (considered Phase 1) failed to satisfy the requirements of the MMPA because it did not reduce mortality and serious injury to below PBR within 6 months of implementation.

Given that recent court ruling and the updated 88-93 percent risk reduction target, additional risk reduction will be necessary from all fixed gear fisheries coastwide that are regulated under the Plan. The team is tasked with recommending measures to achieve this target reduction to NMFS.

Atlantic Large Whale Take Reduction Team

The team is composed of 60 fishermen, scientists, conservationists, and state and federal resource managers from Maine to Florida. The East Coast Councils and the ASMFC each have one representative on the team. In addition, two MAFMC Council members are on the team as industry representatives from the trap/pot fishery. At team meetings, members are encouraged to bring the perspectives from the groups they represent, while also being willing to listen, learn from each other, and work towards compromise and consensus.

In 2022, the team has met for multi-day meetings in May and September to develop sets of mitigation measures to be analyzed for risk reduction, with several informational webinars before and after these meetings. The informational webinars have included topics such as new model updates or results, new information about right whales, and updates on ropeless gear technology. All team meetings are open to the public and an opportunity for public comments is typically scheduled for a designated period on the agenda. Presentation slides and recordings from recent webinars as well as information about upcoming meetings can be found on the team webpage.

The team is meeting November 14-18 to 1) review new model results based on ideas offered by caucuses, 2) hear the results of constituent conversations from one another, 3) consolidate team feedback on a handful of packages, and 4) outline a potential Team recommendation. In preparation for this meeting, there will be a webinar to review analyses on November 9 from 6 p.m.-9 p.m. Finally, on December 1-2, 2022, the team will meet to discuss and arrive at final recommendations to NMFS.

MAFMC Protected Resources Committee

The Protected Resources Committee (Committee) met in September 2021 and September 2022 to discuss the potential modifications to the plan. These meetings promoted stakeholder engagement, provided feedback to NMFS, and informed the Council's representation on the team. In addition, at their September 2022 meeting the Committee requested:

- Mid-Atlantic risk units by primary fishery, by month, as well as total risk units for the coastwide MAFMC fisheries by month.
- Information available and/or being used to evaluate vertical gillnet height to determine entanglement risk reduction in Mid-Atlantic gillnet fisheries.

The results of this data request were distributed to the Committee on October 13, 2022 and are included in the appendix of this document. Information from this data request is also presented in data summaries within the Risk Information section of this document. The Committee can discuss these results and comment on any related considerations and recommendations.

Risk Information

The primary tool for assessing the amount of risk of lethal entanglement associated with the different fishing gear in the water is a NMFS developed model referred to as the Decision Support Tool (DST). An earlier version of the DST was peer-reviewed by an independent panel of scientists in November 2019. The DST uses fishery information obtained from state and Federal fisheries to establish vertical line density, which when combined with modelled whale densities produces a co-occurrence model. The characteristics of gear configurations inform the threat posed by the gear in causing serious injury or mortality to right whales. The tool can be used to select gear characteristics, rope strength, and area fished and overlays gear and whale density by area and season. The results can provide a relative risk "score" for given scenarios of when, where, and how fishing occurs.

Figures 1-3 below provide a broad overview of the risk to right whales coastwide and the amount of risk reduction needed to reach prescribed targets. These figures are based on analyses presented by NMFS at the September 2022 team meeting. As shown in Figure 1, 2.5% of the overall coastwide risk to right whales is from the other trap pot category and 3.5% is from the gillnet category. The bulk of the risk coastwide is from the lobster/Jonah crab category. Similarly, the bulk of the risk coastwide comes from the Gulf of Maine region, followed by Southern New England, Mid-Atlantic, and the Southeast region (Figure 2). Tables 1-3 are focused on the Mid-Atlantic and Southern New England regions based on the results of the data request from the Committee to the team in September 2022. As illustrated in Figure 3, Southern New England includes New York and northern New Jersey, therefore those risk percentages were included in this report. These regional boundaries are for risk description purposes in the model, however measures developed for risk reduction do not need to use these boundaries as constraints.

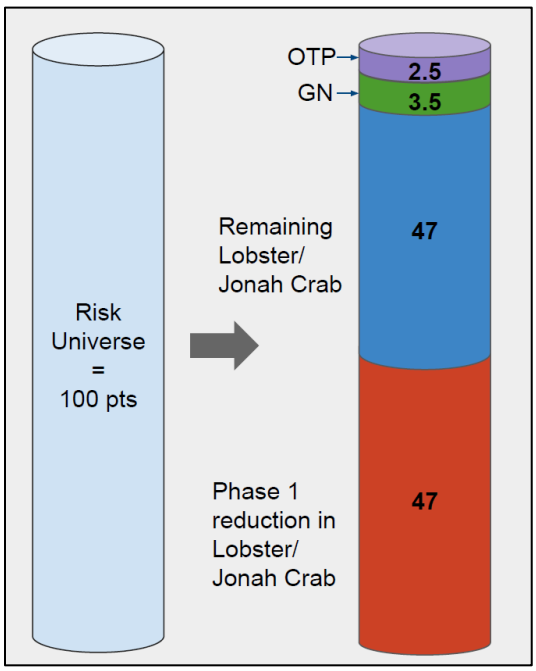


Figure 1. Total risk across all U.S. fisheries under the plan, coastwide. The second bar represents the proportion of risk by gear type/fishery (OTP=other trap/pot, GN=gillnet). The red portion represents the amount of risk reduced through mitigation measures already implemented. The team is tasked with developing measures to go from the current 47 risk points to between 88 and 93 total risk points reduced coastwide. One risk point=one percentage point of total risk. Source: preliminary analyses subject to revision, presented by NMFS in November 2022).

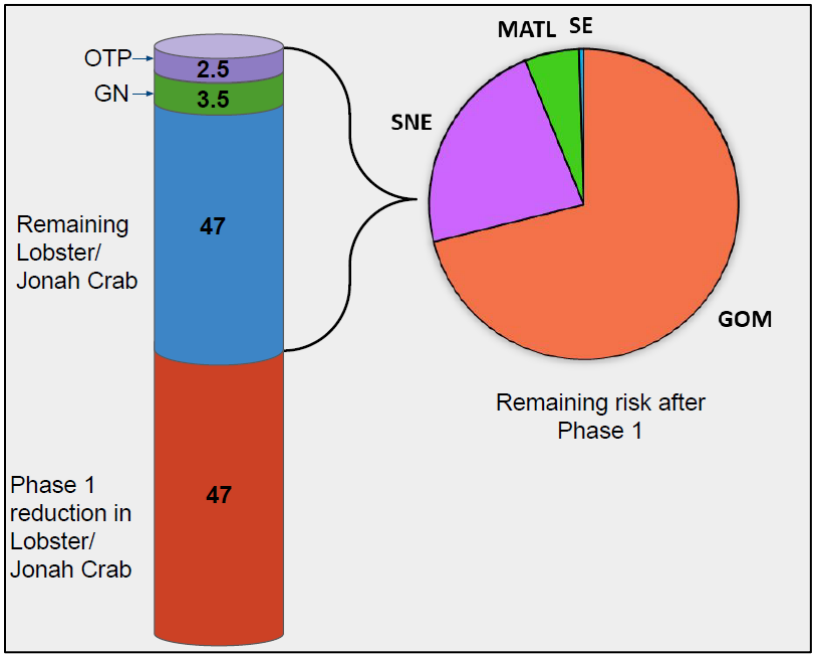


Figure 2. Risk by gear/fishery from Figure 1 with pie chart illustrating remaining risk by region (MATL=Mid-Atlantic, SNE=Southern New England, SE=Southeast, GOM=Gulf of Maine). Source: preliminary analyses subject to revision, presented by NMFS in November 2022.

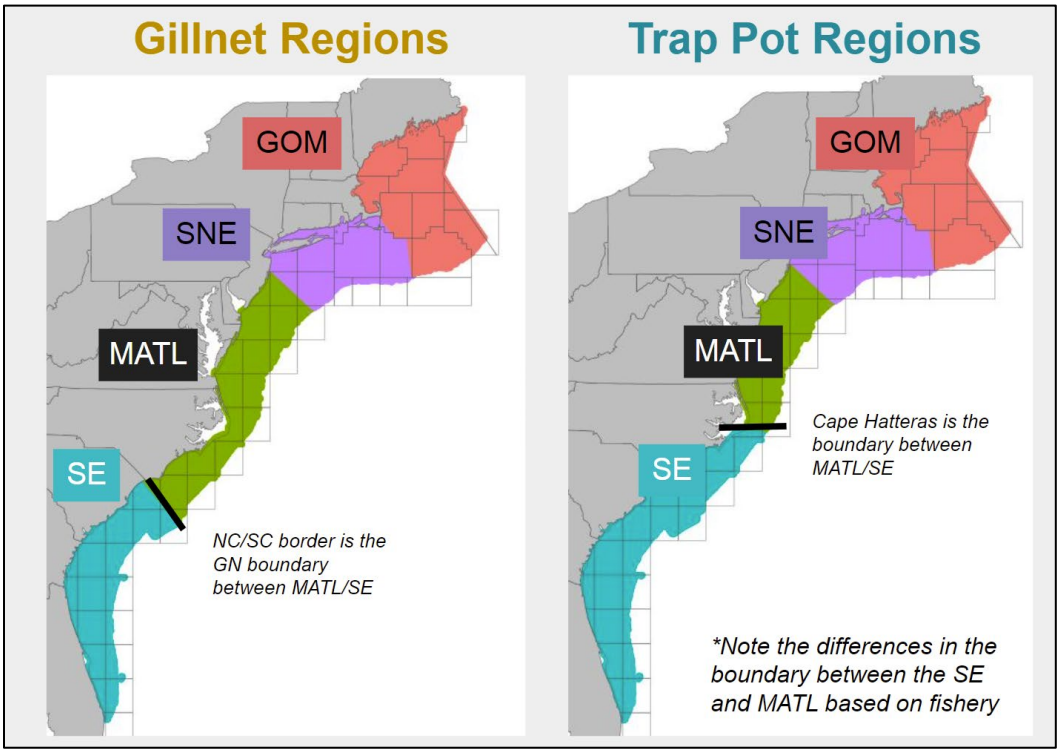


Figure 3. Regional boundaries used in risk analyses by gear category (source: preliminary analyses subject to revision, presented by NMFS in September 2022).

Table 1. Mid-Atlantic and Southern New England region total risk percentages by mesh size for gillnet fisheries. Percentages will not sum to 100% as this table excludes the Gulf of Maine and Southeast regions. See Appendix for all regions (source: data request results).

Region	Gillnet Fishery	Coastwide Relative Risk	Within Gillnet Relative Risk
MATL	Region Total	0.41%	12.07%
	Large Mesh	0.06%	1.63%
	Medium Mesh	0.21%	6.11%
	Small Mesh	0.15%	4.32%
SNE	Region Total	1.93%	57.23%
	Large Mesh	1.90%	56.31%
	Medium Mesh	0.03%	0.86%
	Small Mesh	0.00%	0.05%

Table 2. Mid-Atlantic and Southern New England Region total risk percentages by species categories (top species landed) for gillnet fisheries. The fishery category "Fed" includes all mesh sizes and species of gillnet fishing in federal waters. Percentages will not sum to 100% as this table excludes the Gulf of Maine and Southeast regions. See Appendix for all regions (source: data request results).

Region	Gillnet Fishery	Coastwide Relative Risk	Within Gillnet Relative Risk
MATL	Region Total	0.41%	12.07%
	Dogfish	0.30%	8.80%
	Fed	0.22%	6.62%
	InshoreSpp	0.05%	1.62%
	MonkfishSkate	0.05%	1.58%
	SharkSpp	0.00%	0.07%
SNE	Region Total	1.93%	57.23%
	Dogfish	0.02%	0.48%
	Fed	1.90%	56.20%
	InshoreSpp	0.03%	0.97%
	MonkfishSkate	1.88%	55.74%
	NEGroundfish	0.00%	0.04%

Table 3. Monthly risk percentages for the Southern New England and Mid-Atlantic regions and gillnet (GN) and other trap/pot (OTP) gear categories. These percentages are relative to total risk across all regions and gears (source: spreadsheet provided to team, September 2022). OTP includes fisheries for hagfish, shrimp, conch/whelk, red crab, Jonah crab, rock crab, black sea bass, scup, tautog, cod, haddock, Pollock, redfish (ocean perch), white hake, spot, skate, catfish, stone crab, and cunner.

Month	SNE OTP	MATL OTP	SNE GN	MATL GN
Jan.	0.1%	0.5%	0.4%	0.3%
Feb.	0.2%	0.1%	0.5%	0.3%
Mar.	0.2%	0.0%	0.0%	0.3%
Apr.	0.3%	0.1%	1.5%	0.2%
May	0.4%	0.1%	1.0%	0.0%
Jun.	0.2%	0.0%	0.2%	0.0%
Jul.	0.1%	0.0%	0.1%	0.0%
Aug.	0.1%	0.0%	0.0%	0.0%
Sept.	0.1%	0.0%	0.0%	0.0%
Oct.	0.2%	0.1%	0.0%	0.0%
Nov.	0.4%	0.3%	0.1%	0.1%
Dec.	0.2%	0.9%	0.2%	0.4%

Mitigation Information

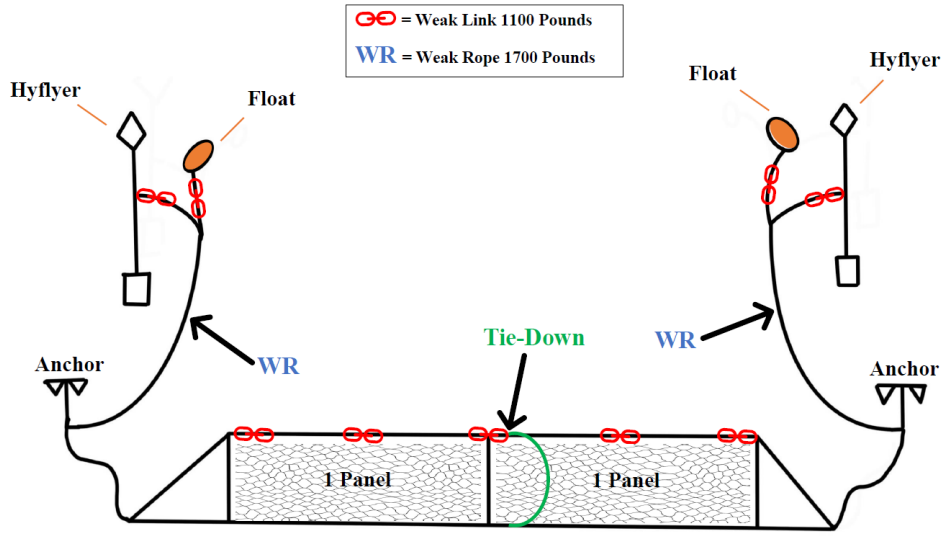
Ideas discussed by the team to mitigate risk for gillnet fisheries include changing configurations such as increasing the minimum number of net panels per set to reduce endline numbers, reducing the number of buoy lines on a set of gillnet, gear tending or daytime-only sets for gillnets, installation of weak links at panels and weak rope that breaks at forces of less than 1,700 lb (771 kg), establishing seasonal restricted areas, dynamic management for some gillnet fisheries, and expanding gear marking requirements.

MAFMC staff are aware of one Mid-Atlantic region-based industry proposal submitted to the team modelers for risk reduction analysis, outlined below. More proposals from the region may have been submitted to the modelers, however these submissions are not shared across the team until the results are presented at team meetings.

Mid-Atlantic industry proposal submitted to team modelers for risk reduction analysis:[1]

Gillnet gear/fishery requirements in the Mid-Atlantic (as defined in figure 5):

1. Anchored gillnets targeting smooth dogfish and spiny dogfish will use one endline buoy *(not necessary to make tending requirements)*
2. Anchored gillnets targeting bluefish will use one endline buoy *(not necessary to make tending requirements)*
3. Anchored gillnets targeting monkfish/skates *(with net panel tie down and 1,100-pound weak links in each net panel*) with weak rope *(1,100lbs)* in buoy surface system with a 1,700-pound rope attached to anchor for retrieval.



*Mid-Atlantic weak links in panel differ from construction relative to weak link requirements.

Contact Kevin Wark or Greg DiDomenico with any questions.

[1] Source: Gregory DiDomenico, Lund's Fisheries and team member, personal communication

Figure 4. Mid-Atlantic gillnet configuration with weak links and weak rope labeled throughout the design. Source: Greg DiDomenico, Lund's Fisheries and team member, personal communication.

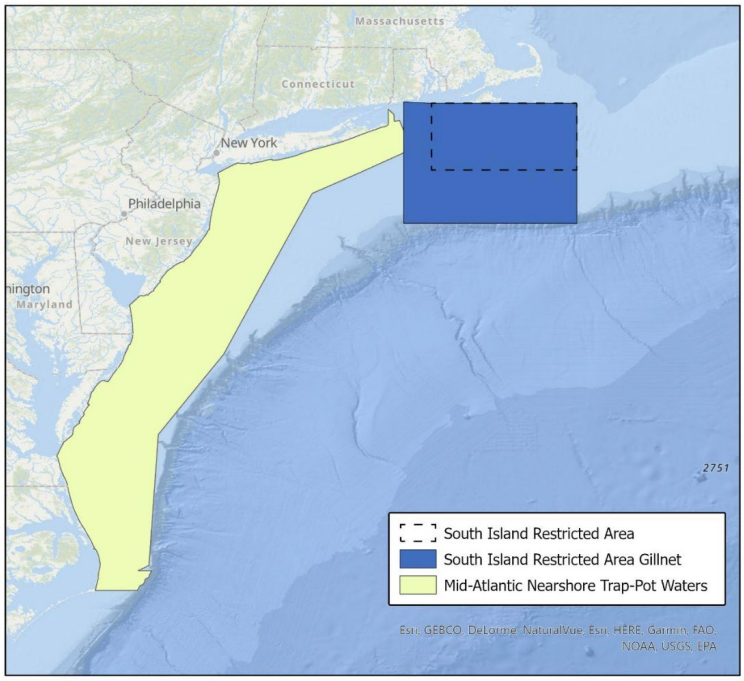


Figure 5. The yellow shaded region is the area referred to as 'Mid-Atlantic' in the industry request outlined above. This area extends further north than the 'Mid-Atlantic' presented in the NMFS risk reduction model results and shown in Figure 3.

Table 4. Industry gillnet proposal results provided by the DST modeling team. Note that risk reduction points in the final column are not additive, so for example combining the last two rows does not guarantee that 2 risk points were reduced. Because of this, combinations of measures are run in large packages that are intended to obtain reductions close to the 90 points.[2]

Measure	Fishery	Region	Time	Risk Reduction
100% Weak Rope	Gillnet (Inshore Spp, Anchor)	Coastwide	Year-Round	<0.5
100% Weak Rope	Gillnet (Dogfish, Anchor)	Coastwide	Year-Round	<0.5
75% Weak Rope	Gillnet (Monkfish & Skate)	Coastwide	Year-Round	1
100% Weak Net Panels	Gillnet (Monkfish & Skate)	Coastwide	Year-Round	1

Ideas discussed for trap/pot fisheries include changing configurations such as traps per trawl to reduce buoy line numbers, requiring only one endline in certain offshore areas where weak rope is not feasible, installation of weak inserts or ropes in buoy lines to break at forces of less than 1,700 lb (771 kg), establishment or modification of seasonal restricted areas, and expansion of gear marking requirements.

[2] Source: Gregory DiDomenico, Lund's Fisheries and team member, personal communication

In addition, Council Member, commercial fisherman, and team member, Sonny Gwin is currently testing ropeless gear through the NEFSC gear lending library program. The gear library is a collection of on-demand or "ropeless" systems, built with help and donations from environmental and academic organizations, that are lent to fishermen for testing. Currently, ropeless gear is still in the experimental stage rather than an option to be considered as a mitigation measure for the upcoming team recommendations.

Appendix: Data request results from NMFS

		Coastwide Fishery Input		Gillnet Fishery Input	
Region	Gillnet Fishery	Relative Risk CoOccurrence	Relative Risk Threat	Relative Risk CoOccurrence	Relative Risk Threat
All Regions	All Fisheries	2.63%	3.34%		
GOM_GBK	All Fisheries	0.59%	0.69%	22.55%	20.67%
GOM_GBK	Anchored Nets	0.59%	0.69%	22.55%	20.67%
GOM_GBK	Dogfish	0.01%	0.01%	0.37%	0.38%
GOM_GBK	Fed	0.32%	0.39%	12.05%	11.64%
GOM_GBK	InshoreSpp	0.00%	0.00%	0.00%	0.00%
GOM_GBK	Large Mesh	0.26%	0.32%	9.96%	9.49%
GOM_GBK	Medium Mesh	0.33%	0.37%	12.59%	11.19%
GOM_GBK	MonkfishSkate	0.15%	0.19%	5.56%	5.63%
GOM_GBK	NEGroundfish	0.25%	0.29%	9.56%	8.56%
GOM_GBK	Small Mesh	0.00%	0.00%	0.00%	0.00%
MAB	All Fisheries	0.37%	0.41%	13.88%	12.07%
MAB	Anchored Nets	0.33%	0.37%	12.57%	10.96%
MAB	Dogfish	0.28%	0.30%	10.35%	8.80%
MAB	Fed	0.20%	0.22%	7.52%	6.62%
MAB	InshoreSpp	0.05%	0.05%	1.93%	1.62%
MAB	Large Mesh	0.04%	0.06%	1.57%	1.63%
MAB	Medium Mesh	0.19%	0.21%	7.06%	6.11%
MAB	MonkfishSkate	0.04%	0.05%	1.52%	1.58%
MAB	SharkSpp	0.00%	0.00%	0.08%	0.07%
MAB	Small Mesh	0.14%	0.15%	5.25%	4.32%
SE	All Fisheries	0.28%	0.31%	11.62%	10.02%
SE	Anchored Nets	0.03%	0.03%	1.15%	1.03%
SE	Fed	0.01%	0.01%	0.46%	0.41%
SE	InshoreSpp	0.26%	0.28%	10.58%	9.08%
SE	Large Mesh	0.00%	0.00%	0.00%	0.00%

SE	Medium Mesh	0.02%	0.03%	0.98%	0.89%
SE	SharkSpp	0.00%	0.00%	0.09%	0.08%
SE	Small Mesh	0.26%	0.28%	10.64%	9.14%
SNE	All Fisheries	1.38%	1.93%	51.94%	57.23%
SNE	Anchored Nets	1.38%	1.93%	51.89%	57.19%
SNE	Dogfish	0.01%	0.02%	0.49%	0.48%
SNE	Fed	1.35%	1.90%	50.77%	56.20%
SNE	InshoreSpp	0.03%	0.03%	1.06%	0.97%
SNE	Large Mesh	1.36%	1.90%	50.91%	56.31%
SNE	Medium Mesh	0.03%	0.03%	0.97%	0.86%
SNE	MonkfishSkate	1.34%	1.88%	50.34%	55.74%
SNE	NEGroundfish	0.00%	0.00%	0.04%	0.04%
SNE	Small Mesh	0.00%	0.00%	0.06%	0.05%

Vertical and Horizontal Risk

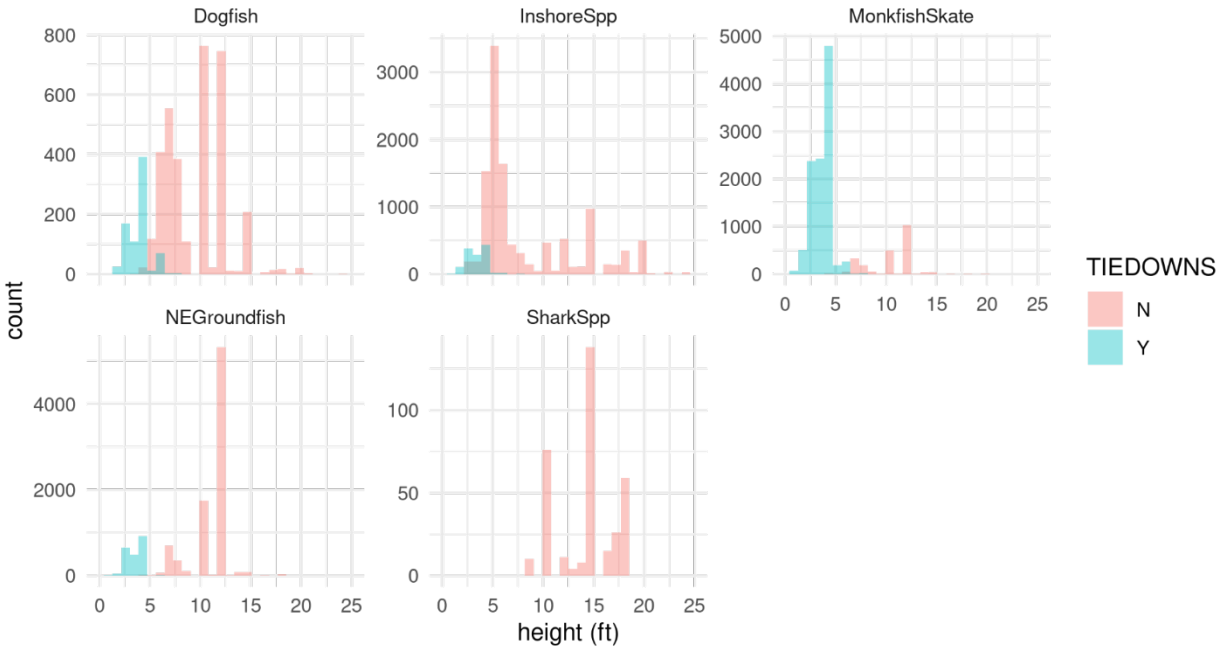
ScenarioName	Month	Vertical Line	Monthly Percentage	Horizontal Line	Monthly Percentage
BaselineGOM_Anchor	1	46.09109	7.59%	4.742719	3.23%
BaselineGOM_Anchor	2	10.55413	1.74%	2.301595	1.57%
BaselineGOM_Anchor	3	1.956442	0.32%	0.344849	0.24%
BaselineGOM_Anchor	4	202.109	33.30%	89.4086	61.00%
BaselineGOM_Anchor	5	127.4512	21.00%	38.72234	26.40%
BaselineGOM_Anchor	6	43.02431	7.08%	1.694402	1.16%
BaselineGOM_Anchor	7	36.97014	6.09%	2.404448	1.64%
BaselineGOM_Anchor	8	4.184867	0.69%	0.393903	0.27%
BaselineGOM_Anchor	9	1.166583	0.19%	0.055315	0.04%
BaselineGOM_Anchor	10	43.67533	7.19%	1.771113	1.21%
BaselineGOM_Anchor	11	51.92512	8.55%	1.791034	1.22%
BaselineGOM_Anchor	12	38.38759	6.32%	2.985074	2.04%
BaselineGOM_Anchor	Total	607.4958		146.6154	
BaselineGOM_Medium	1	33.02155	10.10%	3.417327	4.16%
BaselineGOM_Medium	2	5.204686	1.59%	0.578509	0.70%
BaselineGOM_Medium	3	1.251085	0.38%	0.297153	0.36%
BaselineGOM_Medium	4	130.167	39.80%	60.155	73.20%
BaselineGOM_Medium	5	84.5226	25.80%	12.58961	15.30%
BaselineGOM_Medium	6	9.011757	2.76%	0.726125	0.88%
BaselineGOM_Medium	7	9.821699	3.00%	1.024092	1.25%
BaselineGOM_Medium	8	1.007812	0.31%	0.097304	0.12%

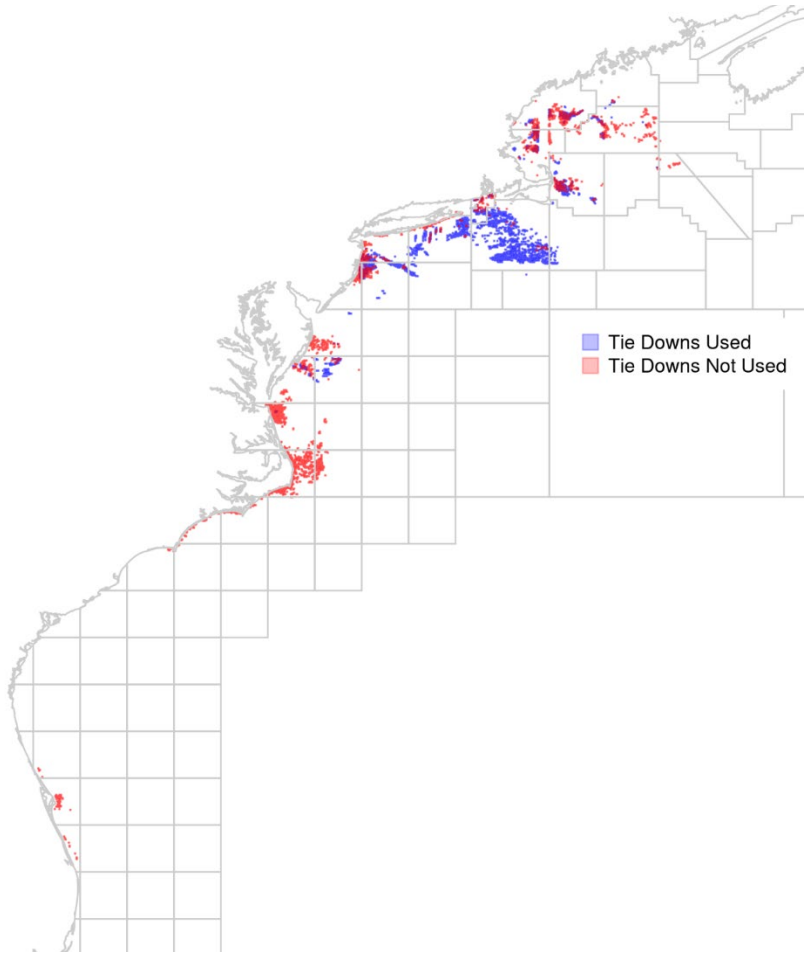
BaselineGOM_Medium	9	0.367902	0.11%	0.018322	0.02%
BaselineGOM_Medium	10	10.79997	3.30%	0.756062	0.92%
BaselineGOM_Medium	11	19.59623	5.99%	0.966821	1.18%
BaselineGOM_Medium	12	22.25243	6.80%	1.606226	1.95%
BaselineGOM_Medium	Total	327.0247		82.23255	
BaselineMAB_Dogfish	1	29.68759	26.40%	53.19302	25.50%
BaselineMAB_Dogfish	2	32.79275	29.10%	54.52909	26.20%
ScenarioName	**Month**	**Vertical Line**	**Monthly Percentage**	**Horizontal Line**	**Monthly Percentage**
BaselineMAB_Dogfish	3	20.30708	18.00%	32.02306	15.40%
BaselineMAB_Dogfish	4	8.051443	7.15%	10.3781	4.98%
BaselineMAB_Dogfish	5	0.210004	0.19%	0.496012	0.24%
BaselineMAB_Dogfish	6	0.06614	0.06%	0.184252	0.09%
BaselineMAB_Dogfish	7	0.001485	0.00%	0.004506	0.00%
BaselineMAB_Dogfish	8	0.000376	0.00%	0.000792	0.00%
BaselineMAB_Dogfish	9	0.00546	0.00%	0.014046	0.01%
BaselineMAB_Dogfish	10	0.028625	0.03%	0.091102	0.04%
BaselineMAB_Dogfish	11	1.473949	1.31%	5.226653	2.51%
BaselineMAB_Dogfish	12	19.96963	17.70%	52.31314	25.10%
BaselineMAB_Dogfish	Total	112.5945		208.4538	
BaselineMAB_Medium	1	18.85803	25.30%	36.66607	24.60%
BaselineMAB_Medium	2	19.16178	25.70%	34.62159	23.20%
BaselineMAB_Medium	3	13.28205	17.80%	20.52014	13.80%
BaselineMAB_Medium	4	6.879288	9.24%	9.915614	6.65%
BaselineMAB_Medium	5	0.301169	0.41%	0.825152	0.55%
BaselineMAB_Medium	6	0.065782	0.09%	0.180298	0.12%
BaselineMAB_Medium	7	0.001583	0.00%	0.005723	0.00%
BaselineMAB_Medium	8	0.001074	0.00%	0.007575	0.01%
BaselineMAB_Medium	9	0.007607	0.01%	0.038676	0.03%
BaselineMAB_Medium	10	0.028417	0.04%	0.113036	0.08%
BaselineMAB_Medium	11	1.200586	1.61%	4.638275	3.11%
BaselineMAB_Medium	12	14.66511	19.70%	41.54582	27.90%
BaselineMAB_Medium	Total	74.45247		149.078	
BaselineSE_Small	1	1.405068	7.56%	25.43418	8.13%
BaselineSE_Small	2	1.56002	8.39%	24.87009	7.95%
BaselineSE_Small	3	3.282163	17.70%	60.34989	19.30%
BaselineSE_Small	4	2.179121	11.70%	31.6137	10.10%
BaselineSE_Small	5	0.251687	1.35%	2.519905	0.81%
BaselineSE_Small	6	0	0.00%	0	0.00%
BaselineSE_Small	7	0	0.00%	0	0.00%
BaselineSE_Small	8	0	0.00%	0	0.00%
BaselineSE_Small	9	0	0.00%	0	0.00%

BaselineSE_Small	10	0.952427	5.12%	15.66405	5.01%
BaselineSE_Small	11	3.32112	17.90%	52.52312	16.80%
BaselineSE_Small	12	5.632477	30.30%	99.69987	31.90%
BaselineSE_Small	Total	18.58408		312.6748	
BaselineSNE_Fed	1	239.8873	11.70%	0.461795	4.48%
BaselineSNE_Fed	2	245.0077	12.00%	0.457805	4.44%
BaselineSNE_Fed	3	3.884488	0.19%	1.559853	15.10%
ScenarioName	**Month**	**Vertical Line**	**Monthly Percentage**	**Horizontal Line**	**Monthly Percentage**
BaselineSNE_Fed	4	738.136	36.10%	1.788192	17.40%
BaselineSNE_Fed	5	507.7239	24.80%	2.792708	27.10%
BaselineSNE_Fed	6	81.33352	3.98%	0.789468	7.66%
BaselineSNE_Fed	7	46.95308	2.30%	0.687874	6.68%
BaselineSNE_Fed	8	6.721202	0.33%	0.480284	4.66%
BaselineSNE_Fed	9	10.78827	0.53%	0.283032	2.75%
BaselineSNE_Fed	10	16.30192	0.80%	0.382563	3.71%
BaselineSNE_Fed	11	42.77083	2.09%	0.244059	2.37%
BaselineSNE_Fed	12	104.6741	5.12%	0.37569	3.65%
BaselineSNE_Fed	Total	2044.182		10.30332	
BaselineSNE_MonkfishSkate	1	236.8852	11.70%	2.686663	13.40%
BaselineSNE_MonkfishSkate	2	244.9428	12.10%	2.688034	13.40%
BaselineSNE_MonkfishSkate	3	3.327484	0.16%	3.062694	15.30%
BaselineSNE_MonkfishSkate	4	737.5844	36.40%	3.387746	16.90%
BaselineSNE_MonkfishSkate	5	503.184	24.80%	3.525677	17.60%
BaselineSNE_MonkfishSkate	6	79.89676	3.95%	0.761531	3.81%
BaselineSNE_MonkfishSkate	7	44.24726	2.18%	0.274484	1.37%
BaselineSNE_MonkfishSkate	8	4.876928	0.24%	0.033739	0.17%
BaselineSNE_MonkfishSkate	9	10.06934	0.50%	0.638522	3.19%
BaselineSNE_MonkfishSkate	10	15.17049	0.75%	0.18851	0.94%
BaselineSNE_MonkfishSkate	11	42.15552	2.08%	0.196935	0.99%
BaselineSNE_MonkfishSkate	12	102.7691	5.07%	2.546732	12.70%
BaselineSNE_MonkfishSkate	Total	2025.109		19.99127	
BaselineGOM_Fed	1	45.97589	11.80%	4.372939	16.00%
BaselineGOM_Fed	2	9.547231	2.44%	1.089374	4.00%

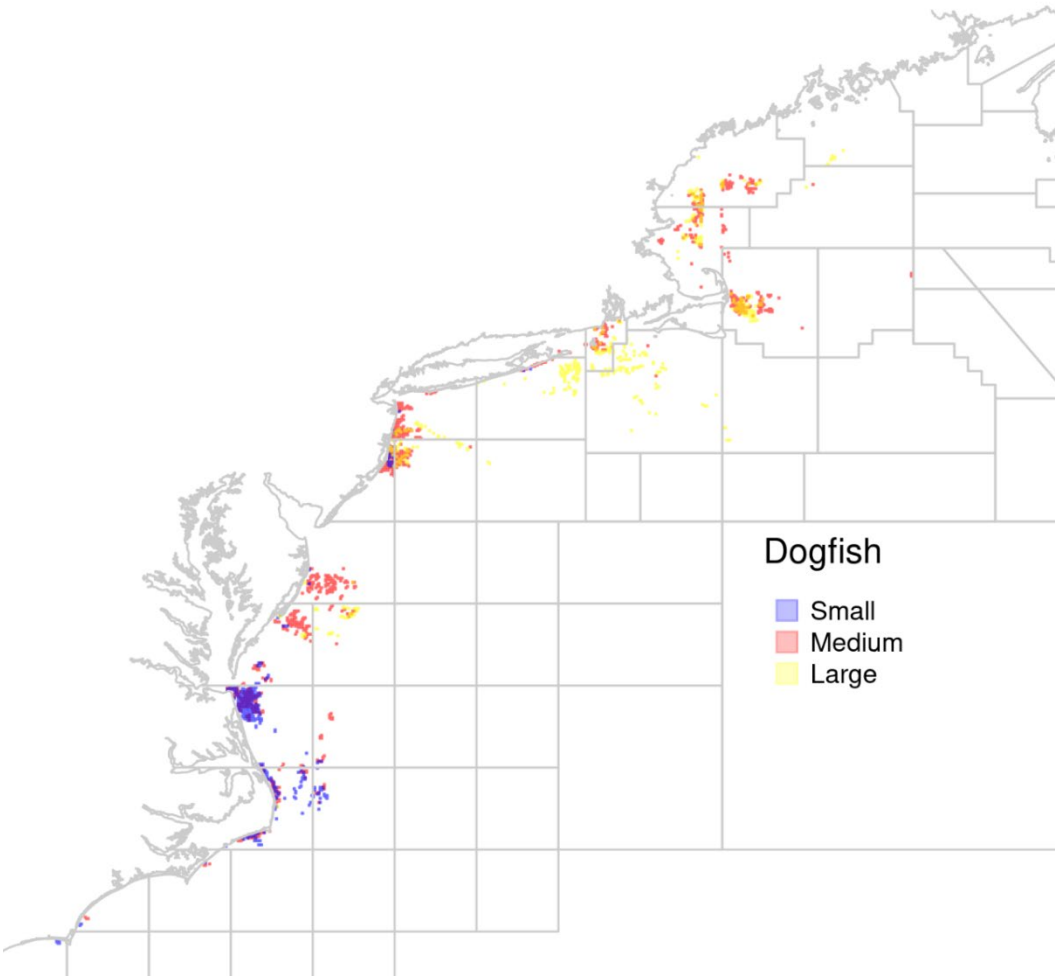
BaselineGOM_Fed	3	1.404553	0.36%	0.118055	0.43%
BaselineGOM_Fed	4	78.29945	20.00%	8.731099	32.00%
BaselineGOM_Fed	5	41.58803	10.60%	2.961145	10.90%
BaselineGOM_Fed	6	42.97158	11.00%	1.670848	6.13%
BaselineGOM_Fed	7	36.78971	9.41%	2.200405	8.07%
BaselineGOM_Fed	8	4.179818	1.07%	0.360199	1.32%
BaselineGOM_Fed	9	1.159976	0.30%	0.048456	0.18%
ScenarioName	**Month**	**Vertical Line**	**Monthly Percentage**	**Horizontal Line**	**Monthly Percentage**
BaselineGOM_Fed	10	43.46652	11.10%	1.588475	5.83%
BaselineGOM_Fed	11	48.55126	12.40%	1.342878	4.93%
BaselineGOM_Fed	12	37.2019	9.51%	2.769541	10.20%
BaselineGOM_Fed	Total	391.1359		27.25341	
BaselineGOM_NEGroundfish	1	37.50652	14.30%	3.958519	11.60%
BaselineGOM_NEGroundfish	2	7.707363	2.93%	1.096794	3.22%
BaselineGOM_NEGroundfish	3	1.422689	0.54%	0.126375	0.37%
BaselineGOM_NEGroundfish	4	80.00213	30.40%	11.09646	32.50%
BaselineGOM_NEGroundfish	5	48.74485	18.50%	12.65469	37.10%
BaselineGOM_NEGroundfish	6	9.339682	3.55%	0.690799	2.03%
BaselineGOM_NEGroundfish	7	10.41194	3.96%	0.856151	2.51%
BaselineGOM_NEGroundfish	8	1.382864	0.53%	0.079521	0.23%
BaselineGOM_NEGroundfish	9	0.496598	0.19%	0.022201	0.07%
BaselineGOM_NEGroundfish	10	16.00128	6.08%	0.895945	2.63%
BaselineGOM_NEGroundfish	11	23.46743	8.92%	1.000531	2.93%
BaselineGOM_NEGroundfish	12	26.57667	10.10%	1.624336	4.76%
BaselineGOM_NEGroundfish	Total	263.06		34.10232	

Tie Downs / Net Height

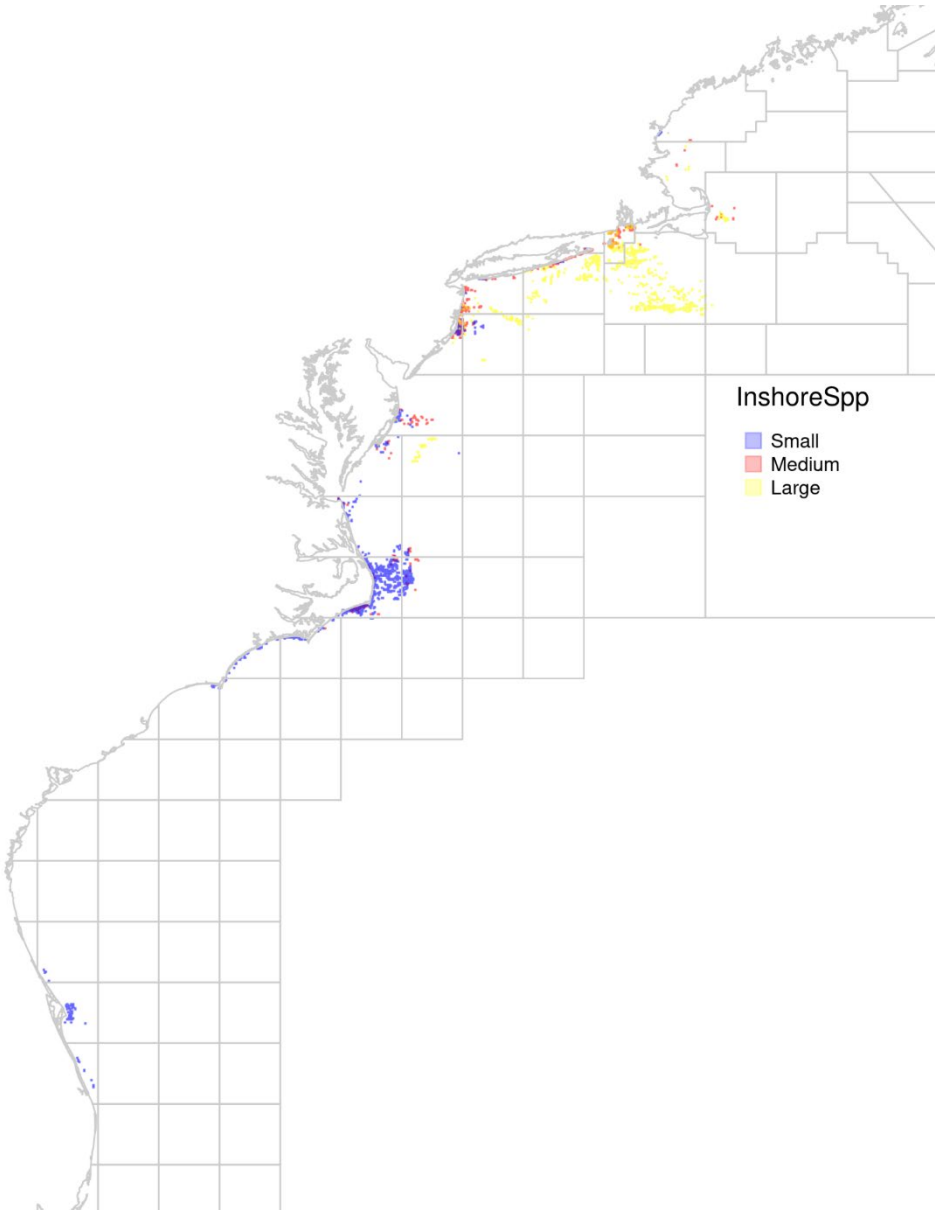




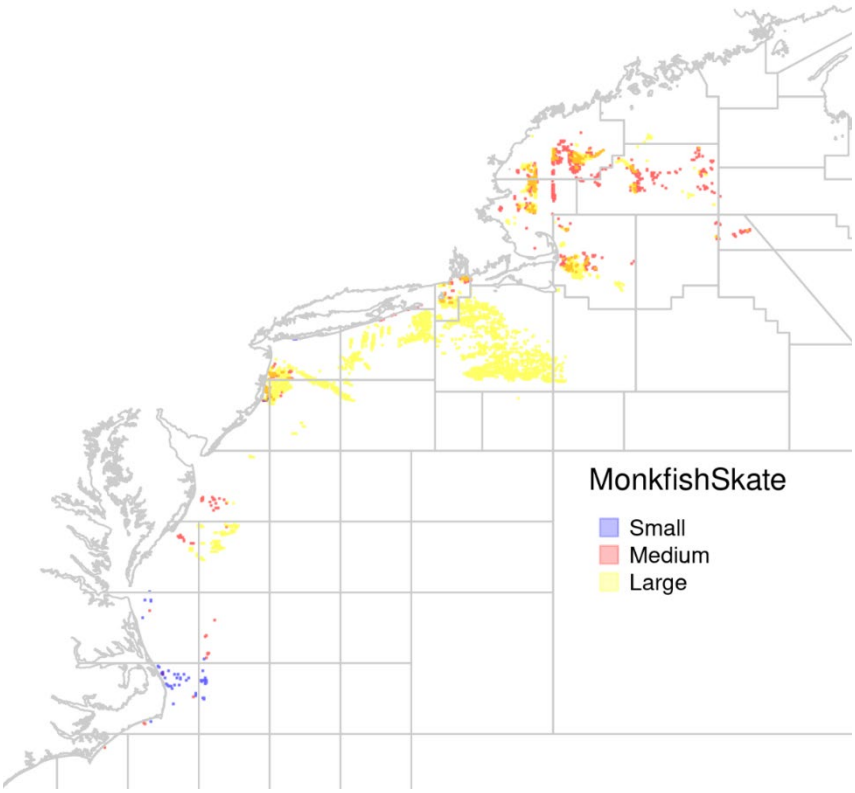
Mesh Sizes By Fishery

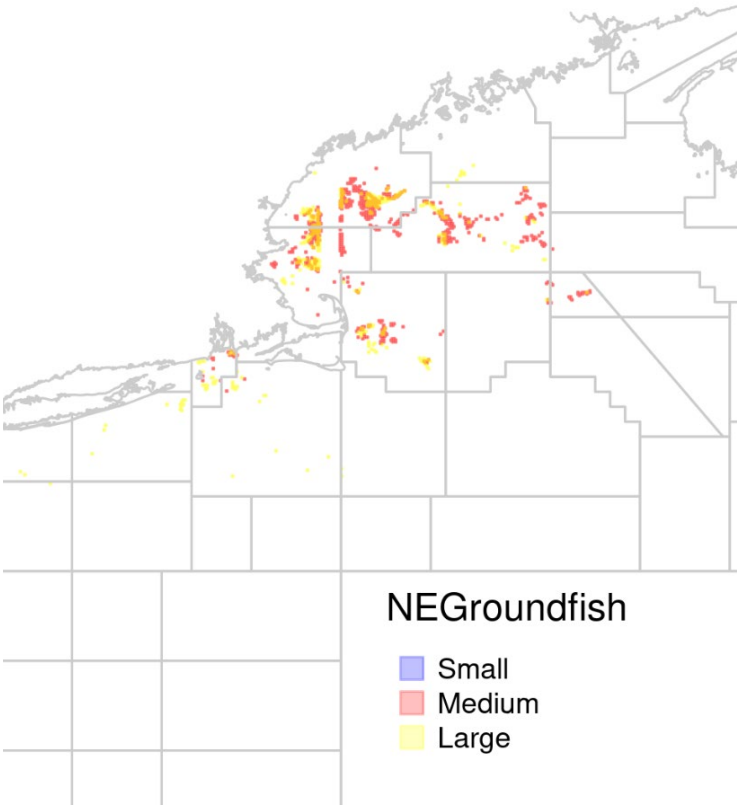


Mesh Sizes By Fishery



Mesh Sizes By Fishery





From: James Fletcher <unfa34@gmail.com>
Sent: Wednesday, November 16, 2022 10:41 AM
To: brian.galvez@noaa.gov; Spedden, Shelley <sspedden@mafmc.org>; Didden, Jason <jdidden@mafmc.org>; Moore, Christopher <cmoore@mafmc.org>
Subject: rope less gear protection of Whales

United National Fisherman Assoc has put fort: **ALL MOBILE GEAR TO PROTECT WHALES: DREDGES; TRAWL; BEAM TRAWLS non anchored gill netting ; WHAT EVER.**
NOAA / NMFS REFUSES TO DISCUSS UTILIZATION OF ALL MOBILE GEAR TO HARVEST LOBSTERS FISH ALL SPECIES IN THE EEZ;
WHY WILL NOAA NMFS NOT DISCUSS ALL MOBILE GEAR? NO POTS, NO ROPES, NO ANCHORED GILL NETS, ?

--

United National Fisherman's Association James Fletcher Director 123 Apple Rd Manns Harbor NC 27953 land 252-473-3287 cell 757-435-8475

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 1, 2022

To: Council

From: Mary Sabo, Staff

Subject: 2023 Implementation Plan

The Council will meet on Wednesday, December 14 to review and consider approval of the 2023 Implementation Plan. The annual implementation plan describes the specific fishery management actions, deliverables, and other activities planned for the upcoming year within the context of the Council's five-year strategic plan. The following is enclosed for Council consideration:

- Draft 2023 Implementation Plan

The following supplemental materials are available online:

- 2022 Implementation Plan End-of-Year Updates
- 2020-2024 Strategic Plan
- 2020-2024 Strategic Plan Overview (2-pager)

DRAFT FOR COUNCIL REVIEW
DECEMBER 2022

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

2023 Implementation Plan

MID-ATLANTIC
FISHERY MANAGEMENT COUNCIL

CONTENTS

INTRODUCTION

The Mid-Atlantic Fishery Management Council is responsible for the conservation and management of more than 65 fish and shellfish stocks that are found within the federal 200-mile limit of the mid-Atlantic region (North Carolina through New York).

The Mid-Atlantic Council was established in 1976 by the Fishery Conservation and Management Act (later renamed the Magnuson-Stevens Fishery Conservation and Management Act, or MSA). The MSA created a 200-mile Exclusive Economic Zone and charged eight regional councils with management of fishery resources in the newly expanded federal waters.

The Council develops fishery management recommendations which must be approved by the Secretary of Commerce before they are finalized and implemented by NOAA Fisheries. All of the Council's fishery management recommendations must be consistent with the ten national standards as defined by the MSA and must be developed in an open, public process as prescribed by law.

Fifteen species are directly managed with specific fishery management plans (FMPs). These include summer flounder, scup, black sea bass, Atlantic bluefish, Atlantic and chub mackerel, *Illex* and longfin squids, butterfish, Atlantic surfclam, ocean quahog, golden and blueline tilefish, spiny dogfish (joint with the New England Council), and monkfish (joint with the New England Council). In addition, more than 50 forage species are managed as "ecosystem components" in all seven FMPs.

The Council partners with other fishery management organizations, including the New England and South Atlantic Fishery Management Councils and the Atlantic States Marine Fisheries Commission, to ensure that fisheries are managed effectively across jurisdictional boundaries.

About This Document

The Council's work is guided by a five-year strategic plan. The current plan, for the years 2020-2024, is organized around five goal areas: Communication, Science, Management, Ecosystem, and Governance.

Each year, the Council develops an annual implementation plan which describes the specific fishery management actions, deliverables, and other activities planned for the upcoming year. The implementation plan is designed to provide a comprehensive and realistic framework for merging the Council's ongoing projects with new initiatives while ensuring progress toward the goals and objectives identified in the strategic plan.

The 2023 Implementation Plan is organized into two main parts:

1. The **Proposed Actions and Deliverables** section provides an overview of activities planned for each fishery management plan and topic area.
2. The **Strategic Plan Framework and 2023 Activities** section organizes the Council's planned actions and deliverables within the context of the 2020-2024 Strategic Plan's five goal areas and 21 objectives. This section also highlights select ongoing/routine activities that address strategic plan objectives.

2020-2024 STRATEGIC PLAN OVERVIEW

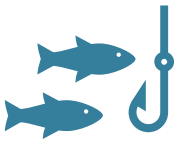
Mission: The Council manages fisheries in federal waters of the Mid-Atlantic region for their long-term sustainability and productivity consistent with the national standards of the Magnuson-Stevens Fishery Conservation and Management Act. The Council is committed to the stewardship of these fisheries, and associated ecosystems and fishing communities, through the collaborative development of effective, science-based fishery management plans and policies.

Vision: Healthy marine ecosystems and thriving, sustainable fisheries and fishing communities that provide the greatest overall benefit to the nation.

Strategic Goals

Communication: Engage stakeholders and the public through education and outreach that foster sustained participation in, and awareness of, the Council process.

Science: Ensure that the Council's management decisions are based on timely and accurate scientific information and methods.



Management: Develop effective management strategies that provide for sustainable fisheries and healthy marine ecosystems while considering the needs of fishing communities and other resource users.

Ecosystem: Support the ecologically sustainable utilization of living marine resources in a manner that maintains ecosystem productivity, structure, and function.

Governance: Ensure that the Council's practices accurately represent and consider the interests of fisheries, fishing communities, and the public through a transparent and inclusive decision-making process.

Visit www.mafmc.org/strategic-plan to download the full strategic plan.

2023 PROPOSED ACTIONS AND DELIVERABLES

This section provides an overview of the activities, amendments, frameworks, specifications, and other projects the Council expects to initiate, continue, or complete during the year. These activities are organized by Fishery Management Plan (FMP) and topic area. See the Appendix for additional details about the proposed deliverables.

SUMMER FLOUNDER, SCUP, BLACK SEA BASS

1. Develop 2024-2025 specifications for summer flounder, scup, and black sea bass
2. Develop 2024-2025 recreational management measures for summer flounder, scup, and black sea bass
3. Evaluate commercial scup discards and gear restricted areas
4. Review and potentially revise commercial minimum mesh size regulations and exemptions for summer flounder, scup, and black sea bass
5. Initiate development of action to replace Recreational Harvest Control Rule after sunset period
6. Continue development of amendment to consider recreational sector separation and recreational catch accounting for summer flounder, scup, black sea bass, and bluefish
7. Continue development of a framework action and technical guidance documents to address the remaining prioritized Recreational Reform Initiative topics for summer flounder, scup, black sea bass, and bluefish
8. Facilitate development of summer flounder, scup, black sea bass advisory panel fishery performance reports
9. Support black sea bass research track assessment
10. Support 2023 management track assessments for summer flounder, scup, and black sea bass

BLUEFISH

11. Develop 2024-2025 specifications for bluefish
12. Develop 2024-2025 recreational management measures for bluefish
13. Facilitate development of bluefish advisory panel fishery performance report
14. Support 2023 bluefish management track assessment

Note: Deliverables 5, 6, and 7 in the previous section will also address bluefish recreational management issues

GOLDEN AND BLUELINE TILEFISH

15. Review 2024 specifications for golden tilefish
16. Review 2024 specifications for blueline tilefish
17. Complete and review Golden Tilefish Individual Fishing Quota Program Review
18. Facilitate development of advisory panel fishery performance reports
19. Review performance of private recreational tilefish permitting and reporting
20. Work with the South Atlantic Fishery Management Council to support the upcoming 2024 blueline tilefish operational assessment
21. Coordinate the 2023 golden tilefish survey pending approval of funding/logistics
22. Support 2024 golden tilefish research track assessment

MACKEREL, SQUID, BUTTERFISH

23. Initiate amendment to address disapproved portions of *Illex* Permit Amendment
24. Develop 2024-2025 Atlantic mackerel specifications
25. Develop 2024-2026 longfin squid specifications
26. Review 2023 specifications for *Illex*
27. Develop 2024-2025 specifications for *Illex*
28. Review 2024 specifications for butterfish
29. Review 2024 specifications for chub mackerel
30. Facilitate development of mackerel, squid, butterfish advisory panel fishery performance reports
31. Support 2023 management track assessments for Atlantic mackerel and longfin squid

RIVER HERRING AND SHAD

32. Develop 2024-2025 cap (paired with Atlantic mackerel specifications)

SPINY DOGFISH

33. Develop 2024-2026 specifications and/or a rebuilding plan (possibly including trip limit changes), as appropriate given outcome of research and management track assessments
34. Facilitate development of spiny dogfish advisory panel fishery performance report
35. Support 2023 spiny dogfish management track assessment

ATLANTIC SURFCLAM AND OCEAN QUAHOG

36. Review 2024 specifications for surfclam and ocean quahog
37. Facilitate development of surfclam and ocean quahog advisory panel fishery performance reports
38. Oversee SCOQ Electronic Monitoring Project

SCIENCE AND RESEARCH

39. Conduct biennial review of the 2020-2024 research priorities document
40. Approve Scientific and Statistical Committee (SSC) membership
41. Review outcomes and recommendations from the SSC Ecosystem Work Group
42. Review past action and consider possible redevelopment of a revised Research Set-Aside program
43. Review results and determine potential application of the research project on short-term forecasts of species distributions
44. Support the 2023 Applying State-Spaced Models Research Track Assessment
45. Coordinate and facilitate the Northeast Trawl Advisory Panel

ECOSYSTEM AND OCEAN PLANNING/HABITAT

46. Continue development of Essential Fish Habitat Amendment
47. Maintain and integrate Northeast Regional Habitat Assessment products
48. Oversee National Fishing Effects Database Project
49. Maintain joint MAFMC and New England Fishery Management Council offshore wind web page
50. Develop habitat- and fishery-related comments on offshore energy development

51. Complete comprehensive review and update to Ecosystem Approach to Fisheries Management risk assessment
52. Complete East Coast Climate Change Scenario Planning Initiative and identify priorities for resulting action

GENERAL

53. Review commercial landings of unmanaged species
54. Participate on Council Coordination Committee Working Groups and Subcommittees (Habitat, Area-Based Management, Legislative, ESA/MSA Coordination, Equity and Environmental Justice)
55. Respond to requests for information associated with Marine Stewardship Council (MSC) certification or audits for MSC-certified fisheries (Atlantic surfclam, ocean quahog, Illex squid, longfin squid, spiny dogfish, scup)
56. Track relevant legislation and provide comments as requested
57. Continue to participate on marine mammal take reduction teams and protected resources working groups, and initiate necessary actions in response to protected resource issues
58. Initiate action in response to the action plan developed by the Atlantic Sturgeon Bycatch Working Group to reduce sturgeon bycatch in gillnet fisheries

COMMUNICATION AND OUTREACH

59. Continue to inform and engage stakeholders using a variety of communication tools and channels, including the Council website, email updates, press releases, YouTube, webinars, face-to-face meetings, and a variety of printed and digital communication materials
60. Conduct outreach to increase stakeholder awareness and understanding of Council actions under development
61. Further develop and refine the Council's website content and structure to increase usefulness and functionality
62. Develop fact sheets and outreach materials as needed
63. Continue additional outreach to improve awareness of, and compliance with, private recreational tilefish reporting requirements

STAFF WRAP-UP ON COMPLETED ACTIONS

The following actions have been, or are expected to be, approved by the Council by the end of 2022 but will require staff work in 2023 to finalize for submission to NMFS:

64. Finalize Surfclam and Ocean Quahog Species Separation Requirements Amendment
65. Finalize and submit any outstanding specifications packages for 2023

POSSIBLE ADDITIONS

To be considered for addition to the 2023 implementation plan if time and resources allow:

66. Initiate action to implement "did not fish" reports for commercial, for-hire, and private tilefish permit holders
67. Initiate action to implement a possession limit for frigate and bullet mackerel in the Mid-Atlantic
68. Continue to track thread herring Exempted Fishing Permit (EFP) application and develop comments, if needed

69. Develop a policy and/or process for reviewing EFP applications for new or expanding fisheries as it relates to the unmanaged forage amendment
70. Coordinate development of economic, recreational fleet dynamics, and population dynamic simulation models for black sea bass, scup, and/or bluefish
71. Explore the use of unused ACL carryover for the Council's fisheries
72. Develop an action to authorize an experimental Atlantic surfclam fishery in the Great South Channel Habitat Management Area (HMA)
73. Develop spatial management options for Atlantic surfclam open water aquaculture in the New York Bight and central Atlantic.

STRATEGIC PLAN FRAMEWORK & 2023 PRIORITY ACTIVITIES

This section organizes the Council's planned actions and deliverables within the context of the 2020-2024 Strategic Plan's five goal areas and 21 objectives. A number of additional ongoing/routine activities are also included. Please note that the Timeframe column describes the *estimated* timeframe for completion of the activity/deliverable (TBD: Work is expected to extend beyond 2023; Ongoing: This item is part of the Council's routine activities and does not have an expected end point; Annually: This activity occurs on an annual basis). **See the Appendix for additional details about these activities**.

COMMUNICATION

Goal: Engage stakeholders and the public through education and outreach that foster sustained participation in, and awareness of, the Council process.

Objectives and Priority Activities for 2023	Deliverable	Timeframe
1. Use a wide range of communication tools and methods tailored to engage target audiences.		
Continue to inform and engage stakeholders using a variety of communication tools and channels, including the Council website, email updates, press releases, YouTube, webinars, face-to-face meetings, and a variety of printed and digital communication materials	59	Ongoing
Further develop and refine the Council's website content and structure to increase usefulness and functionality	61	2023
Coordinate communication efforts with management partners	--	Ongoing
2. Increase stakeholder participation in the Council process.		
Conduct outreach to increase stakeholder awareness and understanding of Council actions under development	60	Ongoing
Develop outreach materials to facilitate constructive stakeholder input on proposed management actions (e.g., scoping guides, video presentations, etc.)	62	Ongoing
Schedule, advertise, and conduct meetings and public hearings in a manner that encourages and enables stakeholder attendance and participation.	--	Ongoing
Utilize webinars, conference lines, and other technology to expand remote access to and/or participation in Council and advisory body meetings	--	Ongoing
3. Broaden the public's understanding and awareness of the Council and its managed fisheries.		
Develop fact sheets and outreach materials on current fisheries issues and topics of public interest	62	Ongoing
Conduct outreach to improve awareness of, and compliance with, private recreational tilefish reporting requirements	63	2023
Collaborate with science partners to develop outreach materials related to stock assessments for Council-managed species	62	Ongoing
Collaborate with partners to promote relevant educational opportunities	--	Ongoing
Ensure that Council documents use plain language	--	Ongoing

SCIENCE

Goal: Ensure that the Council's management decisions are based on timely and accurate scientific information and methods.

Objectives and Priority Activities for 2023	Deliverable	Timeframe
4. Collaborate with science partners and research institutions to ensure that the Council's science priorities are addressed.		
Support stock assessments for Council-managed species, including staff participation on research track working groups	9, 10, 14, 22, 31, 35, 44	Ongoing
Work with the South Atlantic Fishery Management Council to support the upcoming 2024 blueline tilefish operational assessment	20	2023-2024
Conduct 2023 golden tilefish survey pending approval of funding/logistics	21	2023
Coordinate and facilitate the Northeast Trawl Advisory Panel	45	Ongoing
Continue to support implementation and continued development of the Northeast Region Coordinating Council (NRCC) stock assessment process to improve assessment efficiency	--	Ongoing
5. Support the use of collaborative research to meet the Council's science, data, and information needs.		
Review past action and consider possible redevelopment of a revised Research Set-Aside program	42	2023
Identify research needs that can be addressed using collaborative approaches with commercial, for-hire, and recreational fishery participants	--	Ongoing
Continue to support development of cooperative research programs that use "vessels of opportunity" from all sectors to address science and research needs	--	Ongoing
6. Promote efficient and accurate data collection, monitoring, and reporting systems.		
Continue to support the Fishery Dependent Data Initiative (GARFO lead)	--	Ongoing
Review performance of private recreational tilefish permitting and reporting	19	Annually
Oversee SCOQ Electronic Monitoring Project	38	2023
7. Promote the collection of relevant social and economic data and on-the-water observations.		
Collaborate with the Northeast Regional Coordinating Council (NRCC) Stock Assessment Communications Group to facilitate increased stakeholder involvement in (and awareness of) the stock assessment process	--	Ongoing
Engage the Council's SSC to identify existing studies or other sources of social and economic information that could be used to inform management decisions	--	Ongoing
8. Identify and prioritize the Council's research needs.		
Conduct biennial review of the 2020-2024 research priorities document	39	2023

MANAGEMENT

Goal: Develop effective management strategies that provide for sustainable fisheries and healthy marine ecosystems while considering the needs of fishing communities and other resource users.

Objectives and Priority Activities for 2023	Deliverable	Timeframe
9. Strengthen state, federal, and interstate partnerships to promote coordinated, efficient management of fishery resources.		
Complete East Coast Climate Change Scenario Planning Initiative and identify priorities for resulting action	52	2023
Continue to use the NRCC process as a forum for Atlantic coast management entities to enhance communication, coordination, and pursue shared objectives	--	Ongoing
10. Adapt management approaches and priorities to address emerging issues and changing fishery conditions.		
Review and potentially revise commercial minimum mesh size regulations and exemptions for summer flounder, scup, and black sea bass	4	2023
Initiate development of an action to replace Recreational Harvest Control Rule after sunset period	5	TBD
Continue development of an amendment to consider recreational sector separation and recreational catch accounting for summer flounder, scup, black sea bass, and bluefish	6	TBD
Continue development of a framework action and technical guidance documents to address the remaining prioritized Recreational Reform Initiative topics for summer flounder, scup, black sea bass, and bluefish	7	TBD
Evaluate commercial scup discards and gear restricted areas	3	2023
Initiate amendment to address disapproved portions of Illex Permit Amendment	23	TBD
Complete and review Golden Tilefish Individual Fishing Quota Program Review	17	2023
11. Ensure that management decisions consider social, economic, and community impacts and opportunities.		
Respond to requests for information associated with Marine Stewardship Council (MSC) certification or audits for MSC-certified fisheries	55	Ongoing
Participate on CCC Equity and Environmental Justice (EEJ) Working Group (WG)	54	Ongoing

Continued on the following page

Specification-Setting Activities

In addition to the activities associated with specific management objectives, the Council will also develop new or review existing specifications for each of its managed species. These activities are listed below. The associated deliverable is indicated in parentheses.	
Develop and approve new specifications:	• 2024-2025 summer flounder, scup, and black sea bass specifications and recreational management measures (1, 2) • 2024-2025 bluefish specifications and management measures (11, 12) • 2024-2025 Atlantic mackerel specifications and RH/S cap (24, 32) • 2024-2026 longfin squid specifications (25) • 2024-2025 *Illex* squid specifications (27) • 2024-2026 spiny dogfish specifications (33)
Review specifications and recommend changes if needed:	• 2024 golden tilefish specifications (15) • 2024 blueline tilefish specifications (16) • 2024 chub mackerel specifications (29) • 2023 *Illex* squid specifications (26) • 2024 butterfish specifications (28) • 2024 Atlantic surfclam and ocean quahog specifications (36)

ECOSYSTEM

Goal: Support the ecologically sustainable utilization of living marine resources in a manner that maintains ecosystem productivity, structure, and function.

Objectives and Priority Activities for 2023	Deliverable	Timeframe
12. Implement the Council's Ecosystem Approach to Fisheries Management (EAFM) as described in the EAFM Guidance Document.		
Complete comprehensive review and update to EAFM risk assessment	51	2023
Review SSC Ecosystem Work Group recommendations	41	2023
13. Collaborate with management partners to develop ecosystem approaches that are responsive to the impacts of climate change.		
Complete East Coast Climate Change Scenario Planning Initiative and identify priorities for resulting action	52	2023
Review results and determine potential application of the research project on short-term forecasts of species distributions	43	2023
14. Identify, designate, and protect habitat using an ecosystem approach.		
Continue development of Omnibus Essential Fish Habitat Amendment	46	TBD
Oversee National Fishing Effects Database Project	48	TBD
Maintain and integrate Northeast Regional Habitat Assessment products	49	Ongoing
Participate on the CCC Habitat Work Group and Area-Based Management Subcommittee	54	Ongoing
15. Engage in the offshore energy development process to address impacts to Council-managed species and associated habitats.		
Develop habitat- and fishery-related comments on offshore energy development	50	Ongoing
Maintain joint MAFMC-NEFMC Offshore Wind web page	49	Ongoing
Engage offshore wind developers to support effective communication and outreach with the fishing industry	--	Ongoing
16. Support the maintenance of an adequate forage base to ensure ecosystem productivity, structure, and function.		
Review report on commercial landings of unmanaged species and respond to changes if necessary	53	Annually
Consider and account for, to the extent practicable, the impact of Council-managed fisheries on the forage base	--	Ongoing
Consider and account for, to the extent practicable, the role of Council-managed species in the ecosystem, including roles as prey, predator, and food for humans	--	Ongoing

17. Develop management approaches that minimize adverse ecosystem impacts.		
Participate on marine mammal take reduction teams and protected resources working groups, and initiate necessary actions in response to protected resource issues	57	Ongoing
Initiate action in response to the action plan developed by the Atlantic Sturgeon Bycatch Working Group to reduce sturgeon bycatch in gillnet fisheries	58	TBD
Participate on CCC Working Group Addressing Integration of ESA Section 7 with MSA processes	54	Ongoing
Review State of the Ecosystem Report	--	Annually

GOVERNANCE

Goal: Ensure that the Council's practices accurately represent and consider the interests of fisheries, fishing communities, and the public through a transparent and inclusive decision-making process.

Objectives and Priority Activities for 2023	Deliverable	Timeframe
18. Maintain an open, accessible, and clearly defined process.		
Provide an update on Council activities and a summary of implementation Plan progress.	--	Annually
Provide conference lines or Webinar access to Council and advisory body meetings whenever feasible	--	Ongoing
Review and revise the Council Statement of Organization Processes and Procedures (SOPP) as needed	--	Ongoing
19. Engage management partners to promote effective collaboration and coordination.		
Participate on CCC Working Groups and Subcommittees	54	Ongoing
Track relevant MSA/fisheries legislation and develop comments as requested	56	Ongoing
Review the composition and operation of Council committees	--	Annually
20. Ensure that stakeholder interests are understood and addressed.		
Facilitate development of advisory panel fishery performance reports	8, 13, 18, 30, 34, 37	Annually
See Objective 2 for additional related activities		
21. Provide training and development opportunities for Council members and staff to enhance organizational performance.		
Support the ongoing professional development of Council staff	--	Ongoing
Continue to participate in staff-to-staff meetings and collaborate with GARFO, NEFSC, and ASMFC on other initiatives	--	Ongoing

APPENDIX: 2023 PROJECT DESCRIPTIONS

This appendix provides additional background information and details about the proposed actions and deliverables included in the *2023 Implementation Plan.* Details in this Appendix are subject to change. Item numbers in the far-left column are associated with the deliverable numbers in the *Proposed Actions and Deliverables* section of the implementation plan.

Deliverable	Staff Lead(s)	Description
1. Develop 2024-2025 specifications for summer flounder, scup, and black sea bass	Dancy Beaty Hart	Results of the 2023 management track assessments will inform 2024-2025 specifications. Measures to be considered include commercial and recreational catch and landings limits and commercial management measures.
2. Develop 2024-2025 recreational management measures for summer flounder, scup, and black sea bass	Dancy Beaty Hart	Recreational management measures will be set for a two-year cycle to align with anticipated 2023 management track stock assessments, as provided for in the Recreational Harvest Control Rule Framework.
3. Evaluate commercial scup discards and gear restricted areas	Hart	Data through 2019 shows scup discards in the commercial trawl fishery have been well above average, including record breaking high discards in 2017. This review will update and summarize trends in scup discards, evaluate the effectiveness of gear restricted areas, and consider options to address this issue.
4. Review and potentially revise commercial minimum mesh size regulations and exemptions for summer flounder, scup, and black sea bass	Moore	In 2018, the Council and Board reviewed results of a study on minimum mesh size effectiveness for these species. The Monitoring Committee recommended additional analyses and industry input before considering modifications, and the Council and Board recommended continuing to pursue this issue as a lower-tier priority at the time given other ongoing actions for this FMP. Current regulations require different minimum mesh sizes r for each of the three species, which are targeted by an overlapping group of vessels fishing in similar areas. Industry members have requested analysis of a uniform mesh size for these three species. This review would build on the previous research and consider revisions to the commercial minimum mesh sizes and exemptions for summer flounder, scup, and black sea bass.
5. Initiate development of action to replace Recreational Harvest Control Rule after sunset period	Beaty	The Recreational Harvest Control Rule Framework (approved June 2022) modified the process for setting recreational management measures for summer flounder, scup, black sea bass, and bluefish (once bluefish is no longer in a rebuilding plan). The new “Percent Change Approach” will sunset no later than the end of 2025, with a goal of implementing a new and improved approach to managing the recreational fisheries by the beginning of 2026.

Deliverable	Staff Lead(s)	Description
6. Continue development of amendment to consider recreational sector separation and recreational catch accounting for summer flounder, scup, black sea bass, and bluefish	Dancy	This amendment considers (1) options for managing for-hire recreational fisheries separately from other recreational fishing modes and (2) options related to recreational catch accounting, such as private angler reporting and enhanced vessel trip report requirements for for-hire vessels. The Council and Policy Board initiated this action in October 2020. No additional progress has been made due to prioritization of the Harvest Control Rule Framework/ Addenda.
7. Continue development of a framework action and technical guidance documents to address the remaining prioritized Recreational Reform Initiative topics for summer flounder, scup, black sea bass, and bluefish	Beaty	The Council and ASMFC Policy Board agreed to develop a technical guidance document to address the following topics: (1) identifying and smoothing MRIP outlier estimates, (2) use of preliminary current year MRIP data, and (3) maintaining status quo recreational measures. Some of these topics have been partially developed through the Harvest Control Rule Framework/Addenda. No additional progress has been made on a technical guidance document due to prioritization of the Harvest Control Rule.
8. Facilitate development of advisory panel fishery performance reports for summer flounder, scup, and black sea bass	Dancy Beaty Hart	The Council's advisory panels develop Fishery Performance Reports (FPR) each year to provide the Council and SSC with an annual description of the factors that influenced fishing effort and catch within each of the Council's fisheries. These reports are intended to summarize fishermen's "on-the-water" perspectives, including information about fishing effort, market trends, and environmental changes, and other factors that may not be fully accounted for in the stock assessment process. To support development of FPRs, Council staff develop a Fishery Information Document (FID) for each species managed under the fishery management plan. The purpose of the FID is to summarize the most recent catch, landings, and effort data.
9. Support black sea bass research track assessment	Beaty	Research track (RT) assessments evaluate new datasets that can either inform or be used in new or existing stock assessment models. These assessments are carried out over longer time frames and with fewer requirements for using the most recent data. The research track is intended to be the opportunity for extensive and comprehensive research and analysis. The Council staff lead for a species typically participates on the assessment working group (WG) which is responsible for carrying out and making decisions about the stock assessment and addressing the assessment terms of reference.

Deliverable	Staff Lead(s)	Description
10. Support 2023 management track assessments for summer flounder, scup, and black sea bass	Dancy Beaty Hart	Management track (MT) assessments provide routine, scheduled, updated advice to directly inform management actions. MT assessments are designed to be simpler, quicker, and more efficient than research track assessments. NEFSC assessment scientists have primary responsibility for planning and carrying out management track assessments. Council staff involvement typically includes attending assessment meetings/calls, tracking assessment progress, and communicating assessment results to advisory bodies.
11. Develop 2024-2025 specifications for bluefish	Cisneros	Bluefish is currently managed under a rebuilding plan. Results from the 2022 research track and 2023 management track assessments will inform 2024-2025 specifications and management measures.
12. Develop 2024-2025 recreational management measures for bluefish	Cisneros	See #11
13. Facilitate development of bluefish advisory panel fishery performance report	Cisneros	See #8
14. Support 2023 bluefish management track assessment	Cisneros	See #10
15. Review 2024 specifications for golden tilefish	Montañez	Multi-year specifications were previously set for the 2022-2024 fishing years. The Council will review updated information and determine if any changes are needed for 2024.
16. Review 2024 specifications for blueline tilefish	Hart	Multi-year specifications were previously set for the 2022-2024 fishing years. The Council will review updated information and determine if any changes are needed for 2024.
17. Complete and review Golden Tilefish Individual Fishing Quota Program Review	Montañez	The Magnuson-Stevens Act requires the periodic review of all limited access privilege programs. The last review of the golden tilefish IFQ program was completed in 2017. The Council initiated a review in 2022 and expects to complete the review in 2023.
18. Facilitate development of advisory panel fishery performance reports for golden and blueline tilefish	Montañez Hart	See #8
19. Review performance of private recreational tilefish permitting and reporting	Montañez Hart	In August 2020 NOAA Fisheries implemented new permitting and reporting requirements for all recreational vessels targeting or retaining golden or blueline tilefish from Virginia to Maine. The Council will receive an update on numbers of issued permits, landings, reporting systems used, and lessons learned during the first two years of this initiative.

Deliverable	Staff Lead(s)	Description
20. Work with the South Atlantic Fishery Management Council to support the upcoming 2024 blueline tilefish operational assessment	Hart	Council staff will participate throughout the Southeast Data Assessment and Review (SEDAR) process and working group and coordinate Mid-Atlantic/Northeast efforts and support with the Northeast Fishery Science Center.
21. Coordinate the 2023 golden tilefish survey pending approval of funding/logistics	Montañez	Two short-term tilefish surveys conducted in 2017 and 2020 have provided important information to inform the management of golden tilefish. There is an interest in continuing this survey if the necessary funding can be secured.
22. Support 2024 golden tilefish research track assessment	Montañez	See #9 for overview of research track assessments. Note: Council staff will chair the golden tilefish assessment working group.
23. Initiate amendment to address disapproved portions of Illex Permit Amendment	Didden	NMFS disapproved the Council's action to reduce the number of permits in the Illex squid fishery, which was intended to reduce excess capacity in the fishery and mitigate the rapid use of annual quota seen in recent years. The Council may consider developing a follow-on response or action that considers similar or related measures.
24. Develop 2024-2025 Atlantic mackerel specifications	Didden	Results of the 2023 management track assessment will inform 2024-2025 specifications.
25. Develop 2024-2026 longfin squid specifications	Didden	Results of the 2023 management track assessment will inform 2024-2026 specifications.
26. Review 2023 specifications for Illex	Didden	In 2022 the Council set preliminary 2023 *Illex* specifications with the expectation that the SSC (March) and Council (April) will review and may modify the ABC after reviewing updated data and related analyses.
27. Develop 2024-2025 specifications for Illex	Didden	*Illex* data updates in March 2023 will inform development of 2024-2025 specifications.
28. Review 2024 specifications for butterfish	Didden	Multi-year specifications were previously set for the 2023-2024 fishing years. The Council will review updated information and determine if any changes are needed for 2024.
29. Review 2024 specifications for chub mackerel	Beaty	Multi-year specifications were previously set for the 2022-2025 fishing years. The Council will review updated information and determine if any changes are needed for 2024.
30. Facilitate development of MSB advisory panel fishery performance reports	Didden Beaty	See #8
31. Support 2023 management track assessments for Atlantic mackerel and longfin squid	Didden	See #10

Deliverable	Staff Lead(s)	Description
32. Develop 2024-2025 river herring and shad cap (paired with Atlantic mackerel specifications)	Didden	The mackerel fishery operates under a river herring and shad (RH/S) catch cap, which closes the directed mackerel fishery and implements a 20,000 pound trip limit for all permits once the cap (currently 129 MT) has been projected to be caught in the directed mackerel fishery. The Council will review cap performance and determine if changes are needed.
33. Develop 2024-2026 spiny dogfish specifications and/or a rebuilding plan (possibly including trip limit changes), as appropriate given outcome of research and management track assessments	Didden	Results of the 2023 management track assessment will inform 2024-2026 specifications (research track assessment results have suggested a recent decline in biomass).
34. Facilitate development of spiny dogfish advisory panel fishery performance report	Didden	See #8
35. Support 2023 management track assessment for spiny dogfish	Didden	See #10
36. Review 2024 specifications for surfclam and ocean quahog	Coakley	Multi-year specifications were previously set for the 2021-2026 fishing years. The Council will review updated catch and landings information for both stocks and determine if any changes are needed.
37. Facilitate development of surfclam/quahog advisory panel fishery performance reports	Coakley	See #8
38. Oversee SCOQ Electronic Monitoring Project	Coakley	This project is an initial test of the ability of machine learning and image analysis to differentiate the species and determine the length of the two primary clam species caught commercially in federal waters in the Northeast Atlantic. This project will fund placement of cameras and image recording equipment onboard the vessel contracted to conduct the 2023 Northeast Fisheries Science Center (NEFSC) clam survey. The survey is conducted from, and operates like, a typical commercial clam fishing vessel.
39. Conduct biennial review of the 2020-2024 research priorities document	Muffley	A comprehensive biennial review of all Council research priorities will occur in 2023. Feedback and input from all APs, Monitoring Committees, NEFSC staff, and the SSC on existing and new priorities will take place throughout the year. A review of Council-funded projects and an evaluation of all species-specific priorities will occur to track progress and implementation of the document.
40. Approve Scientific and Statistical Committee (SSC) membership	Muffley	The Council will consider reappointment of SSC members whose terms expire in 2023.

Deliverable	Staff Lead(s)	Description
41. Review outcomes and recommendations from the SSC Ecosystem Work Group	Muffley	The Council will review recommendations from the SSC's Ecosystem Work Group on advancing the operational use of ecosystem information in management decisions.
42. Review past action and consider possible redevelopment of a revised Research Set-Aside (RSA) program	Muffley	In June 2022 the Council reviewed recommendations from the Research Steering Committee and discussed potential redevelopment of the RSA program. The Council agreed to continue engaging with the ASMFC and state partners on possible redevelopment of the program in 2023 to determine if issues with the previous program can be addressed.
43. Review results and determine potential application of the research project on short-term forecasts of species distributions	Muffley	The Council is collaborating with Rutgers on a project to develop forecast models to predict short-term (1-10 years) climate-induced distribution changes for four economically important Mid and South Atlantic managed species (summer flounder, spiny dogfish, Illex squid, and gray triggerfish). Short-term projections should provide for greater management utility and application since most management considerations and decisions operate at similar timescales.
44. Support the 2023 Applying State-Spaced Models Research Track Assessment	Muffley	The purpose of this research track is to explore the application and use of state-space models across a wide range of stocks in the Greater Atlantic Region. Council staff will participate on the assessment working group.
45. Coordinate and facilitate the Northeast Trawl Advisory Panel (NTA)	Hart	The NTAP is a joint advisory panel of the Mid-Atlantic and New England Fishery Management Councils. It is comprised of Council members, as well as fishing industry, academic, and government and non- government fisheries experts who provide advice and direction on the conduct of trawl research. The Mid-Atlantic Council serves as the administrative lead for NTAP.
46. Continue development of Essential Fish Habitat Amendment	Coakley	The Council will continue development of the omnibus Essential Fish Habitat (EFH) Amendment (initiated October 2022). This action will concurrently conduct the 5-year EFH review required under the Magnuson Stevens Act while amending fishery management plans for the Council, as needed. This action is an opportunity to utilize the best available fish habitat science to improve EFH designations and support the Council's fish habitat conservation efforts while supporting the EFH consultation process. The consultation process plays an important role in addressing the impacts of non-fishing projects (such as wind energy projects) on fish habitat.
47. Maintain and integrate Northeast Regional Habitat Assessment products	Coakley Kentner	From 2019 to 2022 the Council was engaged in the Northeast Regional Habitat Assessment – a collaborative effort to describe and characterize estuarine, coastal, and offshore fish habitat distribution, abundance, and quality in the Northeast. Core work products were completed in mid-2022 with the launch of the NRHA data explorer. Council staff will maintain and improve these products in 2023 and beyond.

Deliverable	Staff Lead(s)	Description
48. Oversee National Fishing Effects Database Project	Coakley Kentner	The Mid-Atlantic Council will work with the New England Council and NOAA Fisheries to develop a national fishing effects database to support fishery management councils EFH reviews. The National Fishing Effects Database will allow users to see and share information with two levels of accessibility: 1) a detailed, searchable fishing effects library (with direct access to literature where available) for internal Council and NOAA Fisheries users, and 2) a publicly accessible and searchable viewer that can be used by interested parties (Council stakeholders, academics, others) to understand the body of information the Councils use for fishing gear effects analyses.
49. Maintain joint MAFMC and New England Fishery Management Council offshore wind web page	Sabo Beaty	The Council maintains a joint offshore wind page in coordination with the New England Council to communicate updates on offshore wind energy development with interested stakeholders.
50. Develop habitat- and fishery-related comments on offshore energy development	Beaty	The Council will track offshore energy developments and develop comments as appropriate.
51. Complete comprehensive review and update to Ecosystem Approach to Fisheries Management (EAFM) risk assessment	Muffley	The first EAFM risk assessment was completed in 2017 and has been updated annually since then. This review will identify new information and analyses that may be available to further refine or evaluate existing risk factors. In addition, this review will identify any new/different risks and priorities to potentially be included in future risk assessment reports.
52. Complete East Coast Climate Change Scenario Planning Initiative and identify priorities for resulting action	Dancy	The Council has been coordinating with East coast fishery management organizations on a scenario planning process to consider future management strategies in the face of climate change and species distribution shifts. A summit meeting will be held in early 2023 with representatives from participating organizations across regions and jurisdictions. The summit meeting will serve as a venue to discuss input from manager sub-group and individual management body sessions, with the goal of developing a final set of governance, management, and monitoring recommendations from the scenario planning process. Based on the recommendations from the summit meeting, the NRCC will consider priority follow up actions, some of which may be coordinated among multiple management entities and some of which may be initiated at the individual Council level. Details on this initiative are available at https://www.mafmc.org/climate-change-scenario-planning
53. Review commercial landings of unmanaged species	Beaty	The Council will review an annual update on landings of unmanaged species compiled by GARFO. The intent is to look for signs of emerging unmanaged commercial fisheries.

Deliverable	Staff Lead(s)	Description
54. Participate on Council Coordination Committee Working Groups and Subcommittees	Staff	Staff currently participate on the CCC's Habitat Workgroup, Area-Based Management Subcommittee, Legislative Workgroup, ESA/MSA Coordination Workgroup, and Equity and Environmental Justice (EEJ) Workgroup.
55. Respond to requests for information associated with Marine Stewardship Council (MSC) certification or audits for MSC-certified fisheries (Atlantic surfclam, ocean quahog, Illex squid, longfin squid, spiny dogfish, scup)	Staff	The Marine Stewardship Council is an independent, third-party fishery certification program. Council staff are periodically asked to provide information as part of the certification process or for audits of currently-certified fisheries.
56. Track relevant legislation and provide comments as requested	Sabo	The Council will track relevant fisheries/ocean legislation and provide comments if invited to do so by a member of Congress. NOAA General Counsel has instructed the RFMCs that (1) there must be a documented request from Congress, and (2) comments should be limited to technical or factual presentation directly related to performance of the grant.
57. Continue to participate on marine mammal take reduction teams and protected resources working groups, and initiate necessary actions in response to protected resource issues	Cisneros	Council staff currently participate on several marine mammal take reduction teams (TRT), including the Atlantic Large Whale TRT (ALWTRT), Harbor Porpoise TRT, and Pelagic Longline TRT. The ALWTRT is currently engaged in development of measures to reduce the risk of entanglement to right whales in U.S. East Coast fixed gear fisheries including gillnet, mixed species trap/pot, and lobster and Jonah crab trap/pot fisheries. There is a possibility that measures developed by the ALWTRT could require Council action in 2023.
58. Initiate action in response to the action plan developed by the Atlantic Sturgeon Bycatch Working Group to reduce sturgeon bycatch in gillnet fisheries	Cisneros	In December 2022 the Council and NEFMC will decide on a path forward related to the development of an action to address sturgeon bycatch in federal large mesh gillnet fisheries including dogfish and monkfish which are jointly managed.
59. Continue to inform and engage stakeholders using a variety of communication tools and channels	Sabo	A variety of communication platforms and tools are used to engage stakeholders, including the Council website, interested-parties email lists, press releases, YouTube recordings, webinars, face-to-face meetings, and a variety of printed and digital communication materials.
60. Conduct outreach to increase stakeholder awareness and understanding of Council actions under development	Sabo	Outreach is conducted during the development of each Council action to ensure that interested and affected stakeholders are informed about potential management changes and aware of comment opportunities. Communication approaches and outreach products are often tailored to meet the needs of the target audience(s).

Deliverable	Staff Lead(s)	Description
61. Further develop and refine the Council's website content and structure to increase usefulness and functionality	Sabo	Staff will continue efforts to streamline Council web pages, develop new content, and increase usability of the Council website.
62. Develop fact sheets and outreach materials as needed	Sabo	Staff will develop print and digital communication products on an as-needed basis.
63. Continue additional outreach to improve awareness of, and compliance with, private recreational tilefish reporting requirements	Hart Sabo Montañez	At the October 2022 meeting the Council discussed strategies to improve angler awareness and compliance with recreational tilefish permitting and reporting requirements. Council staff will work with NMFS to execute these outreach strategies in 2023.
64. Finalize Surfclam and Ocean Quahog Species Separation Requirements Amendment	Coakley	The Council is expected to take final action at the December 2022 meeting. Additional staff work will be required in 2023 to prepare the amendment for submission to NMFS.
65. Finalize and submit any outstanding specifications packages for 2023	Staff	

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 28, 2022

To: Council

From: Jessica Coakley and Kiley Dancy, Staff

Subject: Proposed Hudson Canyon National Marine Sanctuary

At this meeting, the Council will receive a presentation from LeAnn Hogan, the Regional Operations Coordinator for National Oceanic and Atmospheric Administration (NOAA) Sanctuaries Eastern Region, on the proposed Hudson Canyon National Marine Sanctuary and the NMSA section 304(a)(5) consultation process with Councils. The Council will also develop recommendations to be provided in a letter to the Office of National Marine Sanctuaries (ONMS).

The Council last discussed this issue at the August 2022 meeting, when they received a report from the Ecosystems and Ocean Planning (EOP) Committee and Advisory Panel's (APs) July 2022 meeting. The EOP Committee and AP's comments informed development of a scoping comment letter, which was reviewed by the Council via email and submitted to ONMS on August 8, 2022.[1]

Separate from the public scoping process, the National Marine Sanctuaries Act (NMSA) requires that NOAA consult with the relevant Regional Fishery Management Councils during the designation process for a sanctuary. The ONMS is seeking input on whether the Council may deem it necessary to prepare draft regulations for fishing within the Exclusive Economic Zone to implement the proposed sanctuary designation. Under NMSA section 304(a)(5), the Council may take one of three actions: 1) recommend draft fishing regulations for the proposed sanctuary; 2) recommend that fishing regulations are not necessary; or 3) choose not to act on the matter. For this consultation, "fishing regulations for the proposed sanctuary" refers to **additional** fishing regulations that would be implemented via sanctuary regulations, in addition to fishing regulations adopted by the Councils, NOAA Fisheries, or the Atlantic States Marine Fisheries Commission that may already be in place in the area.

When considering whether draft regulations for fishing are needed, the Council should consider the goals of this proposed national marine sanctuary designation. These goals include supporting conservation of the area's marine wildlife, habitats, and maritime cultural resources; working closely with tribal partners to identify and raise awareness of Indigenous connections to the area; highlighting and promoting sustainable uses of the area; expanding ocean science, monitoring,

[1] The Council's scoping comments are available at: https://www.mafmc.org/s/MAFMC-Hudson-Canyon-Scoping-2022-08-08.pdf.

education, and awareness of the area; and providing a platform for collaborative and diverse partnerships that support effective and inclusive long-term management of the area.

In a letter to the Council dated July 7, 2022, ONMS stated that it "acknowledges WCS's [Wildlife Conservation Society; 2016 Nomination] analysis and believes that the current fishing regulations in the area (i.e., 50 CFR Part 648) promulgated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA, 16 U.S.C. §1801 et seq.) appear to support the goals and objectives of the proposed sanctuary."

At this meeting, the Council should develop recommendations on which of the 3 actions above to support and should provide input to help substantiate any recommendations to be provided to ONMS. The Council has been asked to provide this input by **February 1, 2023.**

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee
2023 Meeting Schedule

Meeting 1: March 7 – 8, 2023
Webinar

Meeting 2: May 9 – 10, 2023
Location: TBD

Meeting 3: July 24 – 26, 2023
Location: TBD

Meeting 4: September 12 – 13, 2023
Location: TBD

Anticipated topics for the 2023 SSC meetings

Meeting	Topics
March	Review/modify 2023 Illex ABC 2023 State of the Ecosystem report Update from SSC Ecosystem Work Group Summer Flounder management strategy evaluation Short-term forecasts of species distributions research Update from Constant/Average ABC Work Group
May	2024 ABC review: Surfclam and Ocean Quahog 2024 ABC review: Chub Mackerel and Butterfish 2024 ABC review: Golden and Blueline Tilefish Finalize process to provide constant/average ABC recommendations Overview of the NE/MA Catch Accounting and Monitoring System (CAMS) Review potential updates to the OFL CV guidance document Introductory overview of research track assessment results: Bluefish, Spiny Dogfish, and Black Sea Bass
July	Management track assessment results and OFL/ABC recommendations for: Longfin Squid Atlantic Mackerel Spiny Dogfish Bluefish Summer Flounder Scup Black Sea Bass
September	Offshore wind discussion Biennial review of 2020-2024 research priorities Update from the SSC Ecosystem Work Group EAFM risk assessment review and update

*Timing and topics may change as meeting agendas are finalized

Ecosystem and Ocean Planning Committee and Advisory Panel Meeting

November 30, 2022
Webinar Meeting Summary

The Mid-Atlantic Fishery Management Council's (Council) Ecosystem and Ocean Planning (EOP) Committee and Advisory Panel (AP) met on Wednesday, November 30th from 9:00 a.m. to 12:00 p.m. The purpose of the meeting was to begin a comprehensive review of the Council's Ecosystem Approach to Fisheries Management (EAFM) risk assessment and to develop the process and timeline to complete the review in 2023.

EOP Committee Attendees: M. Duval (Committee Chair), A. Nowalsky, J. Cimino, D. Stormer, K. Kuhn, S. Winslow (Committee Vice-Chair), S. Lennox, P. Geer, T. Schlichter, J. Hermsen, M. Kahley

EOP Advisory Panel Attendees: F. Akers, E. Bochenek, J. Deem, J. Firestone, W. Goldsmith, Z. Greenberg, P. Himchak, F. Hogan, M. Lapp, C. LoBue, P. Lyons Gromen, P. Simon

Other Attendees: S. Gaichas, G. DePiper, B. Muffley, E. Keiley, K. Wilke, J. Gartland, G. DiDomenico

Conducting a risk assessment is the first step the Council's EAFM structured framework process (Figure 1) and is intended to identify and prioritize ecosystem interactions and help the Council decide where to focus limited resources to address priority ecosystem considerations in its science and management programs. The initial EAFM risk assessment was completed in 2017 and has been updated annually using the utilizing information from the NEFSC Mid-Atlantic State of the Ecosystem Report to provide a snapshot of the current risks to meeting the Council's management objectives. While the risk assessment has been updated to utilize the most recent information available, the risk elements, indicators, and ranking approaches have remained the same as in the original risk assessment. There is a significant amount of additional information and new analyses available to help inform an updated risk assessment that reflect the Council's changing management priorities.

Given the length of time since its initial development, Council and NEFSC staff started off the meeting with a series of presentations that provided an overview of how the risk assessment was developed and how it has been used by the Council and its implementation of the EAFM structured framework process. Staff also offered guidance on what areas of the assessment could be changed, the types or new information available, and opportunities to expand the Council's use of the risk assessment and coordinate with other Council-related ecosystem activities.

Following the presentations and any questions/answers, the Committee and AP offered a variety of suggestions for potential new/revised risk elements, new data and/or resources available to

help inform updated indicators, and alternative ways to evaluate risk ranking criteria. These ideas and concepts will be more fully fleshed out and considered as the risk assessment review continues.

Below is a summary of some of the suggestions offered by the Committee and AP:

- Adding aquaculture in the "Other Ocean Uses" risk element.
- Consider Highly Migratory Species (HMS) and food web interactions.
    - Look for results from ongoing HMS vulnerability assessment.
    - Other predator-prey information such as sea bird diet data.
- Greater consideration of wind lease impacts and risks – for example, changes to local ocean currents and effects on primary productivity/species composition.
    - Utilize new wind related information and research to inform wind risks.
- Consider impacts of invasive species.
- Greater focus on inshore/estuarine habitat alterations and impacts on species productivity. Refine the existing habitat risk elements ("Estuarine Habitat" and "Offshore Habitat") to incorporate new habitat analyses and vulnerability assessments.
- Consider ways to update or refine the species vulnerability assessment that was completed back in 2016 and used to inform the "Distribution Shift" risk element.
- The potential to evaluate, refine, and decompose short and long-term risks and the possibility of doing short/long-term forecast indicators.
- Use and integration of information being developed in the Ecosystem and Socioeconomic Profile (ESP) reports for bluefish, black sea bass, and Atlantic mackerel. These reports contain ecosystem information at the stock specific level.
- Consider improvement and/or refinement to some of the "Management" related risk elements.
- Timing and frequency of future updates to the risk assessment to ensure it's meeting Council needs and contains most appropriate information.

There were also suggestions made on how to improve the risk assessment report and ways to include additional detail on the data and rationale used to support the different risk indicators and rankings.

The group also noted that this review provides an opportunity for the Council to consider future application and integration of the risk assessment into other Council products and decisions. For example, presenting ecosystem information and risk assessment results to the different AP's and greater inclusion of this information into the Council's fishery information documents and AP fishery performance reports.

Next steps and review approach for 2023

The group then discussed the process and timeline for conducting the review in 2023. There was general agreement to following approach:

- Meeting 1 (late winter/early spring) – consider risk elements and definitions
- Meeting 2 (early summer) – consider indicators and risk ranking criteria

- Meeting 3 (late summer/early fall) – review updated risk assessment components and application(s) for Council needs
- Present updated risk assessment to Council in fall 2023

Similar to the approach taken during the development of the original assessment, all of these meetings would be held jointly with the EOP Committee and AP to ensure we are getting input and addressing the key risks of interest by the Council and stakeholders. The first two meetings would likely be held via webinar and the group expressed interest in the third meeting be held in-person or hybrid to allow for greater discussion and interaction within the group. To help organize some of the initial discussions, it was suggested to pull out the relevant components of the EAFM Guidance document (i.e., ecosystem level goals and objectives) and the State of the Ecosystem report (i.e., key ecosystem indicators and new information) to ensure these are reflected in the risk assessment.

Some members of the Committee expressed concern about the scope and number of risk elements that could be included and emphasized prioritizing the risk elements so the report is not overwhelming. There was also interest among the group to consider developing metrics in order to evaluate and identify how and where the risk assessment information is being used by the Council.

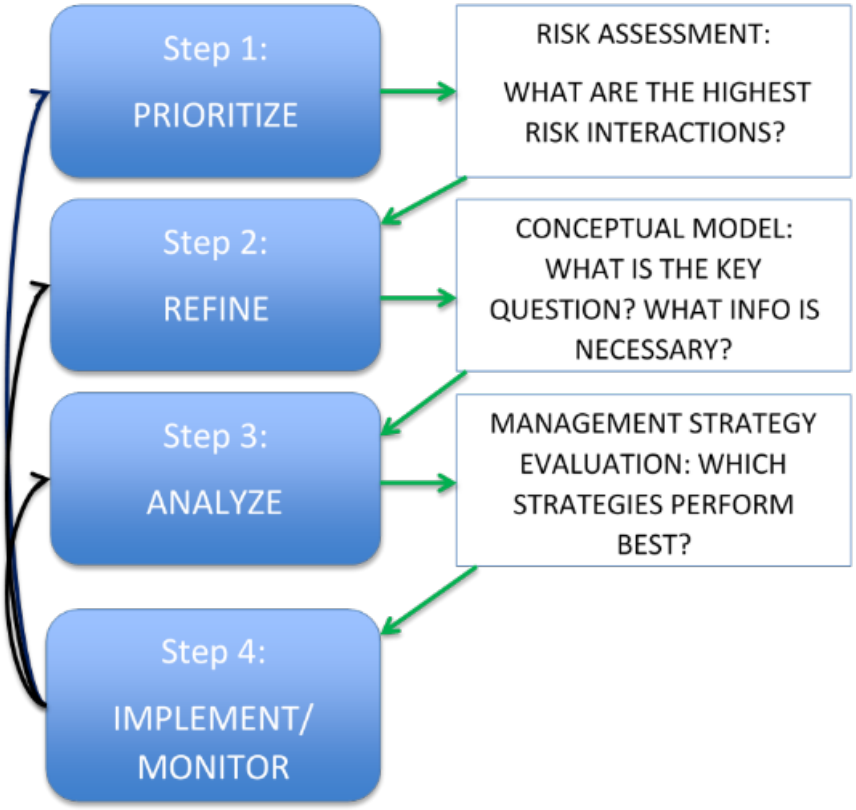


Figure 1. The Mid-Atlantic Fishery Management Council's EAFM structured decision framework to incorporate ecosystem considerations into management (from Gaichas et al. 2016).

Mackerel, Squid, and Butterfish Committee and Advisory Panel Joint Meeting Summary

November 16, 2022 Webinar

The Mid-Atlantic Fishery Management Council's (Council) Mackerel, Squid, and Butterfish (MSB) Committee and Advisory Panel (AP) met jointly on November 16, 2022 at 9am. The purpose of this meeting was to discuss potential follow-up regarding the disapproved *Illex* Permit Amendment.

MSB Committee Attendees: Peter Hughes (Chair), Sara Winslow (Vice-Chair), Melanie Griffin, Dan Farnham, Emily Gilbert, Adam Nowalsky, Michelle Duval, Eric Reid, and Joe Cimino,

MSB AP Attendees: Dan Farnham Jr, Drew Minkiewicz, Emerson Hasbrouck, Fred Akers, Gerry O' Neill, Greg DiDomenico, Jeff Kaelin, Katie Almeida, Meghan Lapp, Pam Lyons Gromen, Robert Ruhle, Sam Martin,

Other Attendees: Jason Didden (MAFMC Staff), John Almeida, Alan Bianchi, Alissa Wilson, Carly Bari, Drew Minkiewicz, Maria Fenton, Michael Luisi, Mike Roderick, Ryan Clark, Sarah Bland, Wes Townsend

Jason Didden of Council staff provided an overview of NMFS' disapproval rationale as well as staff input that an individual transferrable quota (ITQ) system may be the most direct way to address excess capacity and the race to fish. The efficiency gains that are a component of ITQs could also address a number of the issues identified by NMFS in their disapproval rationale.

AP perspectives varied and recommendations included: re-submit after further clarifying how the Amendment addresses the issues identified by NMFS; request further detail on NMFS' disapproval rationales; take no further action; ask NMFS what actions are possible to freeze the capacity footprint of the fishery; consider other actions (e.g. a new control date, a separate fish hold alternative, or a fishery start date). There was no support for moving forward with an ITQ.

The Committee discussed the pros and cons of moving forward, and also whether the issues intended to be addressed by the action (excess capacity and rapid use of quota) still apply given recent quota increases and the fishery landing only a small portion of the quota in 2022. NMFS reiterated that any management measures need to link to corresponding purposes and needs, and must also align with the fishery management plan's goals and objectives, as well as relevant National Standards per the Magnuson–Stevens Fishery Conservation and Management Act.

(Committee motions are on next page)

The Committee passed the following motions:

I move that the Committee recommend that the Council request a more detailed explanation of the amendment rejection in terms of all 10 national standards and what NMFS recommends for future amendment development. Reid/Cimino, 7-0-1

I move that the Committee recommend that the Council explore options/requirements for a framework or amendment to implement a fish hold measurement and baseline limitation for the *Illex* fishery. Farnham/Duval 7-0-1

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 15, 2022

To: Chris Moore

From: Jason Didden, Council staff

Subject: *Illex* Permits next steps

NMFS disapproved the Council's action to reduce the number of permits in the *Illex* squid fishery, which was intended to reduce excess capacity in the fishery and mitigate the rapid use of annual quota seen in recent years.

During Amendment development, the action's Fishery Management Action Team (FMAT) identified that an Individual Transferrable Quota (ITQ) system (referred to in the Magnuson Act as a Limited Access Privilege Program) allows market-based incentives to improve efficiency and address overcapitalization. Developing a follow-on action that considers the potential appropriateness of an ITQ for *Illex* appears to staff to be the most direct way to address excess capacity in the *Illex* fishery given NMFS' disapproval of the Council's action. The Council could also task the action's FMAT to consider if other approaches could remedy the issues identified by NMFS while achieving the same goals of reducing excess capacity and mitigating the rapid use of the quota.

MID-ATLANTIC
FISHERY MANAGEMENT COUNCIL

PRESS RELEASE

FOR IMMEDIATE RELEASE
July 20, 2020

PRESS CONTACT: Mary Sabo
(302) 518-1143

Council Approves Changes to Management of *Illex* Fishery

Last week the Mid-Atlantic Fishery Management Council approved an amendment that proposes modifications to the permitting and management of the *Illex* squid fishery. These changes are intended to both reduce excess capacity in the fishery and mitigate the rapid use of the quota seen in recent years. The amendment also revises the goals and objectives of the Mackerel, Squid, Butterfish (MSB) Fishery Management Plan (FMP). After considerable discussion and consideration of public comments, the Council selected preferred alternatives and adopted the amendment for Secretarial review and implementation. Below are summaries of the issues and the Council's preferred alternatives.

Illex Permitting

In June 2017, the Council considered, but did not adopt, revisions to *Illex* squid permits as part of Amendment 20 to the MSB FMP. Since then, effort and landings have substantially increased, and the fishery closed early in 2017-2019 after harvesting the *Illex* squid quota. Given recent fishery performance, the Council initiated this amendment to evaluate whether permitted access to the *Illex* fishery should be modified based on present and historical participation, and/or other considerations. The amendment considered a range of permitting alternatives, including various time periods and thresholds for permit re-qualification and options for a tiered permitting system.

During last week's meeting, the Council reviewed analyses and public comments and heard additional public testimony from fishery participants both in favor of, and opposed to, potential changes to *Illex* permitting. The Council ultimately voted to implement a tiered permitting system. The proposed tiers, qualification criteria, and trip limits are described in the table below.

	Qualification Criteria	**Trip Limit**
Tier 1	*Either:* • Landed at least 500,000 pounds in one year between 1997 and 2013 OR • Purchased and installed a refrigerated seawater system, plate freezing system, or blast freezer between January 1, 2012 and August 2, 2013 and landed a minimum of 200,000 pounds of Illex in the 2013 fishing year	None
Tier 2	• Landed at least 100,000 pounds in one year between 1997 and 2018	62,000 pounds
Tier 3	• Landed at least 50,000 pounds in one year between 1997 and 2018	20,000 pounds

Under this tiered permitting system, of the 75 current limited access moratorium permits, it is estimated that 35 would qualify for Tier 1, 13 would qualify for Tier 2, 2 would qualify for Tier 3, and 25 would not qualify for any Tier. The Council acknowledged that this action would have positive and negative

economic consequences for some fishery participants but ultimately concluded that the selected alternative best balanced the needs of historic participants, present participants, and dependent fishing communities.

Other Illex Management Measures

The Council also voted to require that Tier 1 permit holders obtain a baseline measurement of their vessel fish hold volume. These permit holders would then be subject to a 10% upgrade restriction. This measure is intended to help freeze the footprint of the fishery and avoid additional over-capitalization. The amendment would also clarify that daily catch reporting of *Illex* is required via Vessel Monitoring Systems (VMS) for vessels with limited access *Illex* permits.

Next Steps and Additional Information

The Council will submit this amendment to the Secretary of Commerce for approval and implementation. Updates will be posted on the Council's website at http://www.mafmc.org/actions/illex-permitting-msb-goals-amendment. For additional information about this action, contact Jason Didden at jdidden@mafmc.org or (302) 526-5254.

https://www.fisheries.noaa.gov/bulletin/amendment-22-mackerel-squid-and-butterfish-fishery-management-plan-decision?utm_medium=email&utm_source=govdelivery

Amendment 22 to the Mackerel, Squid, and Butterfish Fishery Management Plan Decision

September 06, 2022

NOAA Fisheries has disapproved the Illex squid permit measures of Amendment 22 to the Mackerel, Squid, and Butterfish Fishery Management Plan.

NOAA Fisheries has disapproved the *Illex* squid permit measures of Amendment 22 to the Mackerel, Squid, and Butterfish Fishery Management Plan (FMP). The proposed action in Amendment 22 would have revised the number and type of permits in the *Illex* squid fishery in an attempt to reduce the negative effects from a race to fish in recent years.

After reviewing the amendment record, analyses, and public comments, we have determined that this action is inconsistent with Magnuson-Stevens Fishery Conservation and Management Act requirements to ensure fair and equitable allocations, consider efficiency in the utilization of fishery resources, take into account and allow variations and contingencies in fisheries, and minimize costs. Additionally, the proposed action failed to meet the stated purpose and need of the amendment and would not ensure the reduction of a race to fish.

The Mid-Atlantic Fishery Management Council approved Amendment 22 for Secretarial review and implementation at its July 2020 meeting. In undertaking this review, the Magnuson-Stevens Act requires the Secretary of Commerce to make a determination as to whether Amendment 22 is consistent with the Magnuson-Stevens Act and other applicable laws and publish a notice of availability for the amendment in the *Federal Register*. The Magnuson-Stevens Act requires to take into account the information, views, and comments received on the amendment from interested parties when making a decision to approve, partially approve, or disapprove a Council amendment to an FMP.

We published a Notice of Availability for Amendment 22 on June 7, 2022 (87 FR 34629), and accepted public comments on the amendment through August 8, 2022. NOAA Fisheries received 54 comment submissions from commercial fishermen and fishing organizations. Of these comments, 22 were in support of the amendment, 31 comments were in opposition to the action, and 1 comment was not applicable. The *Illex* squid fishing industry participants remained split in their support of this action because only some of the industry participants would have benefitted from this action, while other industry participants would have borne the costs of this action.

Our review of Amendment 22 determined the amendment and supporting analyses did not adequately demonstrate how the Council's proposed action (1) meets the purpose and need of the Amendment and the goals and objectives of the FMP; (2) allocates fishing privileges fairly and equitably, as required by National Standard 4 of the Magnuson-Stevens Act; (3) considers efficiency in the utilization of fishery resources, as required by National Standard 5; (4) takes

into account and allows for variations and contingencies in fisheries, as required by National Standard 6; or (5) minimizes costs to the extent practicable, as required by National Standard 7.

We have notified the Council of our decision and they will have an opportunity to address the action's deficiencies and may decide to submit a revised amendment requesting approval and implementation. The revised FMP goals and objectives that were included in this action will be approved in a future *Federal Register* notice.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

September 6, 2022

Mr. Michael Luisi
Council Chair
Mid-Atlantic Fishery Management Council
800 North State Street
Suite 201
Dover, DE 19901

Dear Mike:

By this letter, I am disapproving the majority of the provisions in Amendment 22 to the Mackerel, Squid, and Butterfish Fishery Management Plan (FMP). As you know, Amendment 22 intended to revise the number and types of *Illex* squid permits to reduce the negative effects from a race to fish in recent years. This amendment also intended to align the fishery goals and objectives with current Mid-Atlantic Fishery Management Council vision and priorities. I am disapproving the *Illex* permit measures in the amendment, but will be approving the adjusted FMP goals and objectives in a future *Federal Register* notice. Additionally, we intend to make the Council's recommended clarification that *Illex* squid moratorium permits must report daily catch via the vessel monitoring system on *Illex* squid trips in a future action pursuant to our rulemaking authority under section 305(d) of the Magnuson-Stevens Fishery Conservation and Management Act.

The Council adopted Amendment 22 for Secretarial review and implementation at its July 2020 meeting. In undertaking this review, section 304(a)(1) of the Magnuson-Stevens Act requires the Secretary of Commerce to make a determination as to whether Amendment 22 is consistent with the Magnuson-Stevens Act and other applicable laws and publish a notice of availability for the amendment in the *Federal Register*. Section 304(a)(2) of the Magnuson-Stevens Act requires the Secretary to take into account the information, views, and comments received on the amendment from interested parties when making a decision to approve, disapprove, or partially approve a Council amendment.

We published a Notice of Availability for Amendment 22 on June 7, 2022 (87 FR 34629), and accepted public comments on the amendment through August 8, 2022. We received 54 comments from commercial fishermen and fishing organizations. Of these comments, 22 were in support of the amendment, 31 comments were in opposition to the action, and 1 comment was not applicable. The *Illex* squid fishing industry participants continue to be split in their support of this action because only some of the industry participants would have benefitted from this action, while other industry participants would have borne the costs.

Our review of Amendment 22 determined the amendment and supporting analyses do not demonstrate how the Council's proposed action (1) meets the purpose and need of the Amendment and the goals and objectives of the FMP; (2) is consistent with National Standard 4 of the Magnuson-Stevens Act, which requires fishery conservation and management measures

allocate fishing privileges fairly and equitably; (3) is consistent with National Standard 5 of the Magnuson-Stevens Act, which requires fishery conservation and management measures consider efficiency in the utilization of fishery resources; (4) is consistent with National Standard 6 of the Magnuson-Stevens Act, which requires fishery conservation and management measures take into account variations and contingencies in a fishery; or (5) is consistent with National Standard 7 of the Magnuson-Stevens Act, which requires fishery conservation and management measures minimizes costs to the extent practicable.

Allocations

National Standard 4 of the Magnuson-Stevens Act requires Councils to assess the effects of allocating or assigning fishing privileges among various United States fishermen to ensure such allocation is: (A) Fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

As stated above, allocations should be reasonably calculated to promote conservation; however, there is no known conservation issue with the *Illex* squid stock (for which the Council's Scientific and Statistical Committee (SSC) has provided evidence concluding that the stock is lightly exploited and the current fishery footprint is small relative to the fishery potential). Because the stock is lightly exploited, the SSC has recommended increases in the *Illex* squid acceptable biological catch (ABC) in each of the past three years and the quota has increased by 67 percent since Amendment 22 was initiated. When development of this action began in 2018, the *Illex* squid ABC was 24,000 mt, and the 2022 *Illex* squid ABC was recently increased to 40,000 mt (87 FR 48447).

The Council has previously expressed concerns with quota overages; however, we have existing controls in place to address these concerns. The *Illex* squid quota was exceeded in 2018 and 2019, but since then we have been tracking landings closely and using more sophisticated projection models that enable us to close the fishery at Council-prescribed closure thresholds at the appropriate time. These were the only 2 years that the quota was exceeded in the past 11 years, and we have avoided quota overages in 2020 and 2021, despite significant increases in landings to take advantage of increasing quotas.

Efficiency

National Standard 5 requires Councils to consider efficiency in the utilization of fishery resources, as long as no such measure has economic allocation as its sole purpose.

According to the National Standard Guidelines at 50 CFR 600.330(c), a system used for limiting access may be considered to combat overfishing, overcrowding, or overcapitalization in the fishery to achieve OY, or may be appropriate for an underutilized fishery to reduce the chance that these conditions will adversely affect the fishery in the future, or to provide adequate economic return to pioneers in a new fishery. None of these conditions apply to the *Illex* squid fishery as the fishery has not encountered issues in achieving OY in recent years, we have sufficient controls in place, as well as 25 years of experience under the existing limited access program that has functioned well. In fact, it has only been in the last six years (after the proposed cutoff of 2013) that the fishery has consistently approached and achieved full yield.

Additionally, the Guidelines at § 600.330(e), state that National Standard 5 prohibits those measures that distribute fishery resources among fishermen on the basis of economic factors alone, and that have economic allocation as their only purpose. While the Council contends that the measures included in Amendment 22 are proposed as a way to combat a race to fish, as discussed above, this action does not reduce fishing capacity in a manner that removes potential for a race to fish, and throughout the development of this action public testimony from proponents of the action focused almost entirely on economic allocation, an infringement of National Standard 5.

Variations and Contingencies
National Standard 6 requires Councils to take into account and allow for variation among, and contingencies in, fisheries, fishery resources, and catches.

The *Illex* squid fishery currently operates with 75 limited access vessels that have an unlimited possession limit (all of which qualified under the original limited access program based on fishing history prior to 1997). The proposed action would reduce that to 39 vessels with unlimited possession limits, reducing fishing opportunity for the remaining 36 vessels by imposing fishing limits that could lead to substantial inefficiencies in their fishing operations. Absent any conservation need or other rationale supported by the evidence, to further reduce opportunities for permitted vessels to participate in the *Illex* squid fishery would be contrary to the intent of National Standard 6. Given the unknown and uncertain impacts of climate change on fish stocks in the region, the potential impacts of wind energy development on the squid fishery to conduct operations, and shifting and evolving markets, any reduction in flexibility in the *Illex* squid fishery could have detrimental effects. By consolidating the majority of harvest opportunities into fewer vessels and fishing companies, we would potentially be increasing the risk that the fishery could fail to effectively adapt to changing conditions and continue to achieve OY.

Minimizing Costs
National Standard 7 requires Councils to minimize costs and avoid unnecessary duplication in the development of management measures where practicable.

The economic analysis for Amendment 22 asserts that the proposed action would have resulted in negligible impacts for those vessels that would be reduced to a Tier 3 permit because those vessels do not regularly derive a substantial portion of their revenues from *Illex* squid, with the exception of one vessel in 2019. The vessels that would be reduced to Tier 2 permits would have experienced greater negative economic impacts because they would have been constrained by trip limits and face greater operational and competitive inefficiencies. The vessels that would have retained their unlimited (Tier 1) permits would have been expected to benefit from positive economic impacts because they would have access to a greater amount of the quota with unconstrained fishing opportunity. Therefore, the Council's analysis reached a conclusion that the overall economic impacts for this action would be slightly positive because the increased fishing and revenue opportunities provided to the Tier 1 vessels would cancel out the decreased fishing and revenue opportunities placed on the Tier 2 (and to some extent Tier 3) vessels. However, in terms of costs and benefits, 36 of the 75 permit holders would have face reduced

opportunities and therefore would have borne the costs of the action, but the benefit to the overall community was lacking because the proposed action would have still allowed for a race to fish to persist.

The National Standard 7 Guidelines at § 600.340(c)(1) also direct that "management measures should be designed to give fishermen the greatest possible freedom of action in conducting business … that are consistent with ensuring wise use of the resources and reducing conflict in the fishery." Reducing fishing opportunities for almost half of the *Illex* squid fleet when not necessary for conservation, not solving the perceived race to fish, and reducing flexibility through restrictive possession limits was determined to be directly contrary to the intent of National Standard 7.

Conclusion
If a Council FMP or amendment is disapproved based on inconsistencies with the Magnuson-Stevens Act or other applicable laws, section 304(a)(3) of the Magnuson-Stevens Act requires the Secretary to recommend actions the Council could take to conform the amendment to the relevant legal requirements. Section 304(a)(4) provides Councils the opportunity to revise and resubmit amendments for Secretarial review after addressing the relevant legal requirements. As discussed above, to conform Amendment 22 to the requirements of applicable law, the Council must either substantially revise the amendment to clearly articulate how the actions proposed by the Council are consistent with the National Standards and the goals and objectives of the FMP, or reconsider the proposed action and revise the amendment to adopt different measures that address a management need without violating the National Standards. However, given the fundamental flaws and inconsistencies we identified, we suggest the latter approach would be more likely to be successful.

We recognize this action represents a difficult decision for the Council. Since development, there have been proponents and opponents of this action and they have presented compelling arguments for and against the final measures. Council staff, in particular, did an admirable job in presenting the facts and supporting the Council through its deliberations on this challenging action. It is unfortunate that we find ourselves with this outcome, but my staff and I remain able and willing to work with the Council should it wish to reconsider this action.

Sincerely,

Michael Pentony
Regional Administrator

cc: Dr. Christopher Moore, Executive Director, Mid-Atlantic Fishery Management Council

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 2, 2022

To: Council

From: Chris Moore, Executive Director

Subject: Executive Director's Report

The following materials are enclosed for review during the Executive Director's Report at the December 2022 Council Meeting:

1. 2023 Council Meeting Schedule
2. NMFS Letter to MAFMC: Annual Report Approval
3. NOAA Anti-Harassment Training
4. Staff Memo: 2023 Golden Tilefish Survey Update
5. Agenda: Council Member Ongoing Development (CMOD) Meeting - Ecosystem-Based Fisheries Management and Ecosystem Approaches to Fisheries Management
6. October 2022 CCC Meeting Report
7. CCC Letter to NMFS: Proposed Changes to the ESA Policy Directive 01-117 to integrate ESA Section 7 with MSA
8. 2022 Fall NRCC Meeting Agenda
9. GARFO Response to NRCC Request: Permit/VTR data request for the Did Not Fish Reports
10. Surfclam/Ocean Quahog Transition to Fish Online eVTR Application
11. Seafreeze Letter to NEFMC: EBFM Committee/Public Information Workshop/ Georges Bank Ecosystem FMP
12. Seafreeze Letter to NMFS: Northeast Canyons and Seamounts Marine National Monument – Amendments to Council FMPs

2023 Council Meeting Schedule

(As of September 20, 2022)

February 7 – 9, 2023	Hotel Washington 515 15th Street NW Washington, DC 20004
April 4 – 6, 2023	Hyatt Place Durham Southpoint 7840 NC-751 Hwy Durham, NC 27713
June 6 – 8, 2023	Hilton Virginia Beach Oceanfront 3001 Atlantic Avenue Virginia Beach, VA 23451
August 8 – 11, 2023	Westin Annapolis 100 Westgate Circle Annapolis, MD 21401
October 3 – 5, 2023	Yotel NYC 570 Tenth Avenue New York, NY 10036
December 11 – 14, 2023	The Notary Hotel 21 North Juniper Street Philadelphia, PA 19107

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

November 30, 2022

Mr. Christopher Moore, Executive Director
Mid-Atlantic Fishery Management Council
800 N. State Street, Suite 201
Dover, DE 19901

Dear Chris,

We have reviewed and approved the progress report for the period ending September 30, 2022, for NOAA Award NA20NMF4410002, "Administrative Cooperative Agreement for 2020-2024." The Council continues to make impressive progress on all priorities, and I especially appreciate the clear details and timeline of activities as presented.

Sincerely,

Nicole

MACDONALD.NICOLE.A.1365816120
Digitally signed by MACDONALD.NICOLE.A.1365816120
Date: 2022.11.30 09:28:46 -05'00'

Nicole MacDonald
Federal Program Officer
Operations Management Division

ec: Kathy Collins

Spedden, Shelley

From: Moore, Christopher
Sent: Wednesday, November 16, 2022 1:32 PM
To: COUNCIL - Voting; CouncilNonVoting; Staff-MAF
Subject: FW: Preventing Harassment and Discrimination training launch for Regional Fishery Management Councils -- training due February 28, 2023

Everyone – see Morgan's email below. We will discuss the training and policies at our next Council meeting. Thanks! C

Christopher M. Moore, Ph.D.
Executive Director
Mid-Atlantic Fishery Management Council
800 N. State St, Suite 201
Dover, DE 19901

302-526-5255
mafmc.org

From: Morgan Corey - NOAA Federal <morgan.corey@noaa.gov>
Date: Wednesday, November 16, 2022 at 11:54 AM
To:
Subject: Preventing Harassment and Discrimination training launch for Regional Fishery Management Councils -- training due February 28, 2023

Good morning,
The Council Coordination Committee recently finalized model policies on Addressing Allegations of Harassment in the Regional Fishery Management Council context. In conjunction with these new policies, NOAA Fisheries has secured Preventing Harassment and Discrimination training from a company called EVERFI FOUNDRY. You will all be assigned this training, which will launch this week (no later than Friday). We wanted to provide a few details here so you can easily access the training.

The email invite will come from an external sender and could be sent to spam. To find the email, search for: <automated-message@everfi-foundry.net>. We recommend adding this email to your trusted contacts list. Once you locate the training invite email, you may login to the system using your email. The system will first ask you to reset your password. You will use the same login info to return to and complete the course on your own time.

The deadline for completing the course is ***February 28, 2023***. You will receive reminders prompting you to complete the course on time and NMFS will check in on the status of trainings completed to follow up with any overdue assignments.

Thank you for your commitment to making the Council environment an atmosphere of respect, collaboration, and safety, free from harassment.

--
Morgan Corey (she/her/hers)
Fishery Management Specialist, Office of Sustainable Fisheries
NOAA Fisheries | U.S. Department of Commerce
Office: (301) 427-8535

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: December 1, 2022

To: Chris Moore, Executive Director

From: José Montañez, Staff

Subject: 2023 Golden Tilefish Survey Update

Background

The latest golden tilefish management track assessment indicated that in 2021 the stock was not overfished and overfishing was not occurring. Currently, there are no fishery independent surveys available for this stock, so indications of population abundance changes are identified through commercial catch per unit effort. Tilefish habitat preference offshore within burrows makes the stock difficult to sample through the current fishery independent trawl surveys. According to dealer reported data, more than 97% of golden tilefish are landed using bottom longline gear, and thus, an associated fishery independent survey should utilize the same gear. In 2020, the Mid-Atlantic Fishery Management Council (Council) funded the first golden tilefish fishery independent survey. The Council is planning to support a second golden tilefish fishery independent survey in 2023.

Survey Development/Facilitation

The 2023 golden tilefish fishery independent bottom longline survey design was developed using the results from the pilot golden and blueline tilefish survey conducted in the summer of 2017 and the golden tilefish survey conducted in the summer of 2020.[1] The goal of the proposed 2023 fishery independent bottom longline survey is to extend the timeseries used to derive an index of abundance for the golden tilefish stock.

The survey will be conducted by Dr. Jill Olin, assistant professor at Michigan Technical University. PI Olin will be responsible for project design with NOAA-NEFSC personnel and all work proposed. For continuity purposes, the same commercial vessel and crew that assisted in prior surveys will be used to conduct the 2023 survey.

The 14-day survey will be conducted in Mid-July. It is anticipated that the Council will receive a final survey report and presentation in December, 2023.

[1] The final reports of the 2017 and 2020 tilefish surveys can be found here: https://www.mafmc.org/tilefish.

Council Member Ongoing Development (CMOD) Meeting
Ecosystem-Based Fisheries Management and Ecosystem Approaches to Fisheries Management

November 15-16th, 2022
Renaissance Denver Downtown City Center Hotel
918 17th Street, Denver, Colorado 80202

Final Agenda

This meeting is funded through support from the Regional Fishery Management Councils in partnership with NOAA Fisheries.

Workshop objectives
The first CMOD workshop will focus on New Approaches to Ecosystem-Based Fisheries Management (EBFM) and Ecosystem Approaches to Fisheries Management (EAFM) with a skills focus on effective development of successful motions. Through interactive presentations and discussions, workshop participants will:

- Explore the regional EBFM/EAFM approaches being developed and implemented across Council regions;
- Consider the range of scientific inputs that support EBFM/EAFM and "on-ramps" for integrating this information into Council processes;
- Explore tools being developed to help Councils understand ecosystem dynamics, assess risk, and explore tradeoffs;
- Discuss challenges and opportunities for building long-term capacity to support EBFM/EAFM within Council processes; and
- Consider the characteristics of a successful motion and share individual experiences relating to the process and "art" of scoping, crafting, and proposing effective motions.

Pre-Meeting Reception - Monday, November 14th

6:00 – 9:00 pm **Welcome reception (light dinner)**
Location: The Wright Room at Appaloosa Grill (535 16th Street, Suite 110)

Day 1: Tuesday, November 15th

All workshop sessions will be held at the Renaissance Denver Downtown City Center Hotel
Main meeting room Endurance/Beauty

7:30 – 8:30 am **Breakfast**
Fisher Room (adjacent to meeting room)

8:30 – 9:00 am **Opening remarks and participant introductions**

- *Katie Latanich and Kim Gordon, Meeting Facilitators*
- *Bill Tweit, Council Vice Chair, North Pacific Fishery Management Council*

9:00 – 10:30 am **Regional approaches to EBFM/EAFM**
Objective: Explore each Council region's approach to EBFM/EAFM and establish a shared frame of reference for CMOD meeting discussions.

Representatives from each Council region will provide a brief **5–7-minute** overview.

North Pacific Fishery Management Council – *Diana Evans, Deputy Director*
Pacific Fishery Management Council – *Kit Dahl, Staff Officer*
Western Pacific Regional Fishery Management Council – *Matt Seeley, Ecosystem Fishery Specialist*
Gulf of Mexico Fishery Management Council – *Lisa Hollensead, Fishery Biologist*
Caribbean Fishery Management Council – *Graciela García-Moliner, FMP and Habitat Specialist*
South Atlantic Fishery Management Council – *Myra Brouwer, Deputy Director for Management*
Mid-Atlantic Fishery Management Council – *Brandon Muffley, Fishery Management Specialist*
New England Fishery Management Council – *Andy Applegate, Senior Fishery Analyst and John Pappalardo, Council Member*

Discussion questions:

- What is distinctive about your Council's approach to EBFM/EAFM? What are the key issues and drivers for your EBFM/EAFM work?
- What is the value proposition of EBFM/EAFM in your region? How has integrating ecosystem information benefitted your Council's decision-making process and outcomes?
- What challenges have you faced in implementing EBFM/EAFM?

10:30 – 10:45 am **Break**

10:45 – 12:00 pm **Integrating ecosystem information through single-species management**
Objective: Explore how ecosystem considerations can be layered onto information inputs and decision points within the FMP/single-species management and ACL framework.

- Introduction to ecosystem information inputs and "on-ramps" – *Sarah Gaichas, Research Fishery Biologist, NMFS Northeast Fisheries Science Center*
- Ecosystem information inputs and single-species management in the North Pacific Fishery Management Council process – *Ebett Siddon, Research Fishery Biologist, NMFS Alaska Fisheries Science Center*
- Group discussion, regional examples and approaches

Discussion questions:

- How does your Council use and interact with Ecosystem Status Reports?
- What do you see as the opportunities and limitations to integrating ecosystem information through single-species management?

12:00 – 1:00 pm **Lunch**

Interest Balcony (overlooking hotel lobby)

1:00 – 3:00 pm **Implementing EBFM/EAFM: The bigger picture**

Objective: Explore approaches Councils are taking or considering to integrate ecosystem information and EBFM/EAFM principles through fishery ecosystem plans, including through fixed-duration projects, long-term planning, and/or FMP restructuring.

Part 1: Looking across Fishery Management Plans

- The evolution of EBFM and Pacific Fishery Management Council's Fishery Ecosystem Plan and Initiatives – *Yvonne deReynier, Senior Resource Management Specialist, NMFS West Coast Regional Office*
- The Mid-Atlantic Fishery Management Council's Risk Assessment Approach – *Sarah Gaichas, Research Fishery Biologist, NMFS Northeast Fisheries Science Center*

Part 2: Restructuring Fishery Management Plans

- The New England Fishery Management Council's Draft Example Fishery Ecosystem Plan for Georges Bank and 2022 public information workshops - *Andy Applegate, Senior Fishery Analyst, New England Fishery Management Council*

Discussion questions:

- What are the issues and drivers prompting your Council to look beyond single-species management for opportunities to integrate ecosystem information?
- What are the reasons for taking a project-based approach to EBFM/EAFM (e.g., through modules or initiatives)? How do you identify and develop projects?
- What are the reasons for taking a longer-term or more comprehensive approach (e.g., long-term planning or FMP restructuring)?

3-00 –3:15 pm **Break**

3:15 – 5:00 pm **Skills focus: Developing effective motions**

Objective: Explore the characteristics of effective motions and share lessons learned on how to effectively scope, develop, introduce, and speak to motions.

- Breakout sessions
- Group discussion

Discussion questions:

- From your perspective, what are the qualities of an effective motion?
- What experiences have helped you develop and refine your proficiency with Robert's Rules and making effective motions?

6:00 – 9:00 pm **Dinner**

Location: Earls Glenarm (1600 Glenarm Place, Unit 140)

Day 2: Wednesday, November 16th

7:30 – 8:30 am **Breakfast**
Fisher Room (adjacent to meeting room)

8:30 – 9:15 am **Day 1 recap and discussion: Regional drivers for EBFM/EAFM**

Discussion:
- What are the regional issues and drivers prompting your council to look beyond single species management and consider ecosystem drivers and information?

9:15 – 10:30 am **Navigating ecosystem change**
Objective: Explore approaches councils are taking to monitor, respond, and plan for ecosystem change.

Part 1: Disruption and short-term impacts
- Red tide impacts to Gulf of Mexico fisheries, and community ecosystem workshops – *Mandy Karnauskas, Ecosystem Science Lead, NMFS Southeast Fisheries Science Center*
- Ecosystem drivers and the West Coast Dungeness Crab fishery – *Jessica Watson, Fishery Management Section Lead, Oregon Department of Fish and Wildlife; Pacific Fishery Management Council Member*
- Environmental drivers and impacts to Pacific Cod in the Gulf of Alaska – *Bill Tweit, Special Assistant to the Director, Washington Department of Fish and Wildlife; North Pacific Fishery Management Council Vice Chair*

Discussion questions:
- What are examples of changes and disruptions that impact your Council's managed species and marine ecosystems?
- How are you able to anticipate and respond through existing pathways (single-species management, EBFM/EAFM initiatives, and long-term planning?) What are the opportunities and the limitations of applying these tools?
- What additional approaches are Councils using to navigate ecosystem uncertainty and complexity?

10:30 – 10:45 am **Break**

10:45 – 12:30 pm **Navigating ecosystem change (continued)**

Part 2: Planning for the unknown
- The Pacific Fishery Management Council's Climate and Communities Initiative and climate change scenario planning process – *Corey Ridings, Pacific Fishery Management Council Member*
- East Coast Climate Change Scenario Planning Initiative –*Brandon Muffley, Fishery Management Specialist, Mid-Atlantic Fishery Management Council*
- *Ecosystem science in a changing environment – Andy Leising, Research Oceanographer, NMFS Southwest Fisheries Science Center*

12:30 – 1:30 pm **Lunch**
Interest Balcony (overlooking hotel lobby)

1:30 – 3:15 pm **New sources of information and knowledge**
Objective: Explore how Councils are incorporating new and diverse sources of information to inform future decision making.

- Stakeholder participation and developing conceptual ecosystem models for the Caribbean Fishery Management Council's Fishery Ecosystem Plan – *Graciela García-Moliner, FMP and Habitat Specialist, Caribbean Fishery Management Council; Michelle Duval, Mid-Atlantic Fishery Management Council Member*
- South Atlantic Dolphin-Wahoo Participatory Workshops - *Mandy Karnauskas, Ecosystem Science Lead, NMFS Southeast Fisheries Science Center*
- Additional regional experiences (e.g., Local Ecological Knowledge, Traditional Ecological Knowledge, citizen science, cooperative research, stakeholder engagement)

Discussion questions:

- What types of information and knowledge help create a more robust picture of your Council's ecosystem(s)?
- How does or how could this information inform your Council's work? How could it help communicate priorities and perspectives to other agencies and user groups?

3:15 – 3:30 pm **Break**

3:30 – 4:30 pm **Evaluating performance and building long term capacity**
Objective: Discuss how Councils can build long-term capacity to engage Council members and advance their ecosystem work.

4:30 – 5:00 pm **Wrap-up Discussion and Next Steps**
Objective: Reflect on takeaways from the first CMOD meeting and provide feedback on the CMOD concept to share with the Council Coordination Committee.

Agenda and meeting materials, including presentations, can be found at: http://www.fisherycouncils.org/cmod-workshops/2022

MEETING REPORT
COUNCIL COORDINATION COMMITTEE

October 18-20, 2022
Washington, D.C.

The Council Coordination Committee (CCC) met October 18-20, 2022, in Washington, D.C. The meeting was chaired by the Mid-Atlantic Fishery Management Council and hosted by the National Marine Fisheries Service (NMFS). The following is a summary of presentations, discussions, and outcomes from the meeting. Briefing materials and presentations are available at http://www.fisherycouncils.org/ccc-meetings/october-2022.

DAY 1 – TUESDAY, OCTOBER 18, 2022

NMFS Updates and FY 2022/2023 priorities

Ms. Janet Coit, Assistant Administrator for NMFS, provided introductory remarks highlighting critical issues being addressed by NMFS such as offshore wind development and permitting along the east coast. She also noted challenges associated with the North Atlantic right whale conservation including regulations to reduce entanglements, vessel strikes, and impacts from offshore wind energy facilities. Ms. Coit noted that similar challenges occur in other regions and are also high priorities for NMFS. Ms. Coit reviewed several other agency objectives, including an historic opportunity for habitat restoration work to improve Pacific salmon. Finally, she identified some recent accomplishments in each of the Council regions in effort to address regional priorities and improve management of fisheries and ecosystems.

Ms. Kelly Denit (NMFS) provided a summary of several NMFS policy updates. She noted the completion of the GAO report on allocation that examined allocation policies and procedures used in fisheries. She stated that the report recommendations are now being operationalized in the Gulf of Mexico and South Atlantic regions as they consider reallocation for several managed stocks in their respective regions. Ms. Denit further noted that the NMFS allocation policy was completed approximately five years ago and is due for a periodic review. She asked if this should be considered further at the next CCC meeting. Dr. Chris Moore stated that he would be in support of discussing this allocation review policy at the May 2023 CCC meeting.

Ms. Denit indicated the NOAA plans to issue a proposed rule in 2023 regarding data confidentiality. This will include topics such as: data submission, mandatory or discretionary data, data access, and appropriate handling of data. The draft policy will be available for public comment. After rulemaking is complete, NMFS will develop additional policy guidance. Ms. Denit then updated the CCC on the OSF strategic plan. She indicated that the agency is currently in Phase I of plan development with expected completion in spring 2023.

Finally, Mr. Michael Rubino (NMFS) gave a brief update on the National Strategy for Seafood Sector Resilience and Competitiveness which is being developed to address numerous and unprecedented challenges facing this industry. The draft Strategy will be made available for public comment and revised accordingly based on the feedback received prior to finalization.

Outcomes/Action Items:

1. The CCC expressed interest in discussing the allocation review policy at the May 2023 CCC meeting.

FY 2023 Budget Breakdown

Mr. Brian Pawlak (NMFS) provided an update on the budget (including the FY 2023 status and budget supplementals) and the American Fisheries Advisory Committee. The federal government is operating under a continuing resolution through December 16, 2022. A 2023 budget is unlikely to be approved until after the November election. The President's proposed FY 2023 budget, the House of Representatives mark, and the Senate mark all have a $50M to $64M increase over the FY 2022 enacted budget for NMFS. For the Regional Councils/Commissions PPA, all three reflect an increase that ranges from $1.5M to $3.5M.

An overview of the NMFS and Council/Commission budgets from FY 2006 through FY 2022 showed modest increases when adjusted for inflation. However, in recent years (since FY 2012) the deflated budget amounts have been relatively constant, with the Council/Commission line declining in real terms since FY 2019.

An update was provided on several budget supplementals. Up to $77M is available for fish passage projects under two programs – restoring Fish Passage through Barrier Removals (up to $65M) and Restoring Priority Tribal Fish passage through barrier Removal (up to $12M). Habitat restoration finding opportunities of up to $95M are also available. The Inflation Reduction Act included $3.3B across NOAA for FY 2022- 2026. Decisions are still being made on the distribution, but it may include funds for consultations and permitting ($20M), $150M for new facilities and marine operations, and $2.6 for coastal climate preparedness and marine and fishery stock assessments.

NMFS is in the process of establishing the American Fisheries Advisory Committee. This group will provide recommendations to the agency on which Saltonstall-Kennedy proposals should be funded. Appointments to the committee should be announced in November, with the first meeting planned for December 12, 2022. The agency is also working on a charter for the Committee.

Outcomes/Action Items:

1. The CCC reiterated its request that Inflation Reduction Act (IRA) funds be allocated to address shortfalls in data collection for marine fishery stock assessments.

NMFS Science Updates

Ms. Kristen Koch (NMFS) presented the science update, with a focus on surveys and climate change responses. National survey effort (tabulated as total days on the water) has steadily declined since at least 2010. This is a concern to NMFS, as these surveys are a critical part of the scientific foundation required for conventional management and climate readiness. Budget limitations, pay rates, and job demands hamper efforts to increase survey days. The agency hopes to address declining conventional survey capacity through increased budget requests, improved planning, modernizing platforms, expanding the suite of survey tools, and a "next generation" data acquisition plan.

Regional climate action plans were highlighted as an important part of advancing climate ready fisheries. Progress on the plans was reviewed, including public comment efforts and outcomes. Final plans are scheduled to be published in December 2022 for implementation beginning in January 2023. Finally, the Climate, Ecosystems, and Fisheries Initiative (CEFI) was reviewed. This is an effort to provide climate information and advice across NOAA. Several regional pilot projects are underway, but significant additional resources are needed to fully implement the initiative.

Several other topics were raised by CCC members:

- The DISMAP tool for addressing species distribution shifts separates datasets into Northeast and Southeast regions, thereby limiting its use to highlight distribution changes across regions. NMFS is aware of the issue and working to resolve the differing survey approaches by 2024.
- Fisheries Science centers conducted a multi-year programmatic review several years ago. Considerable effort was required to conduct these reviews, and NMFS is now rethinking the approach. The next iteration may include higher level review and greater consideration of the science-management interface.
- Concerns have been repeatedly expressed by the CCC about ongoing difficulties in meeting basic science needs, such as the survey issues addressed previously. Questions were also raised about the agency's plans to ensure adequate biological port sampling to meet assessment needs in the Northeast. NMFS responded that port sampling is a priority, but the CCC remains concerned with the ability of NMFS to meet assessment data demands in light of other competing demands.

Outcomes/Action Items: None

Legislative Outlook

Opening remarks were provided virtually by Representative Jared Huffman (D-CA), Chair of the House Natural Resources Committee's Water, Oceans, and Wildlife Subcommittee. Mr. Huffman thanked CCC members for their work and for successful fishery management efforts. He recognized the work of the late Congressman Don Young and noted that they were working to reach a compromise on MSA reauthorization legislation at the time of his passing. Mr. Huffman also praised Mr. Young's successor, Representative Mary Peltola (D-AK) who has signed on to co-lead the H.R. 4690 bill with Representatives Huffman and Case (D-HI). Ms. Peltola testified at a subcommittee hearing in November 2021 and supported many of the provisions of the bill, including support for Alaska Tribal members on the NPFMC. The House markup of the bill made several technical changes. Representative Huffman also noted that the bill increased MSA authorization levels to help advance the good work of the regional councils. He further noted that the bill is a work in progress, and he anticipates further improvements as it moves forward. Issues that came up for discussion during Committee markup included the Essential Fish Habitat (EFH) provision, and he noted that it was his intent to make EFH consultation more meaningful but not to allow it to result in endless litigation. He looks forward to working with the Councils on MSA in the future.

Dr. Fern Gibbons, Policy Director for the Senate Commerce, Science, and Transportation Committee, provided an outlook of fishery related legislation from her perspective. She noted that some issues for the Commerce Committee include parochial fishery issues, such as considering legislative solutions for state and federal data and management of red snapper. The Commerce Committee is hoping to finish fish disaster legislation before end of this Congress. These requirements would address how the disaster declarations get processed, and ways to speed up the process with new statutory timelines. The Commerce Committee has made less progress with MSA reauthorization, so it is unlikely that the Senate will advance anything on MSA in this Congress. There is interest in how to best address Illegal, Unreported, Unregulated (IUU) fishing in a strategic and productive way that cuts down on incoming IUU product entering the U.S. without creating administrative burdens or other unintended consequences. It is possible that both fishery disaster and IUU legislation could be addressed this year through amendments to the Coast Guard authorization bill, but any other changes are likely to happen in the next congress.

In response to a question about proposed improvements to federal disaster response, Dr. Gibbons noted that in addition to statutory timelines, the legislation would combine two existing statutes and provide a list of things that the disaster money can be spent on in the spend plan.

Mr. Dave Whaley, a contractor to the Councils, provided an update on other legislative matters. He noted that 35 Senate seats and all 435 seats in the House of Representatives are up for election in the upcoming midterm election. The margins are currently close. Polling suggests that the House is likely to flip to a Republican majority, whereas control of the Senate is up in the air. If either the House or Senate flip, this means that there will be new committee chairs, new staff, new priorities, new legislation, and new control of hearings. If the Senate flips, it is likely that Senator Cruz (R-TX) would chair the Senate Commerce Committee, and Senator Cantwell (D-WA) would be ranking member. In the House Natural Resources Committee, Representative Westerman (R-AR) would be Chair if the House flips and Representative Grijalva (D-AZ) would be the ranking member. Mr. Whaley reminded the CCC that at the end of this congress, all legislation goes away and would need to be reintroduced in the new Congress. The 118th Congress begins on January 3, so there will be a lame duck session to complete the 117th Congress after the election. Typically, a lot of packages and unrelated bills get tacked onto "must pass" legislation during a lame duck session, and a lot can happen very quickly. He noted that must-do items for Congress include the continuing resolution, disaster assistance for hurricanes, and national defense authorization act (which already includes marine mammal provision, and a provision requiring AIS on all vessels >35'). In addition, an amendment has been filed to that legislation which includes provisions dealing with IUU fishing provisions, driftnet modernization, shark finning, coral reef conservation, blue carbon, working waterfronts, etc.). Other bills, particularly those that have already passed the House or Senate, may be passed individually, such as the driftnet ban, shark finning limits, and marine mammal legislation which includes measures that would require the Secretary to reduce ship collisions with all large whales in all U.S. waters.

Outcomes/Action Items: None

Climate Governance and Scenario Planning Updates

The CCC received several presentations regarding ongoing work on climate change.

Ms. Toni Kerns (ASMFC) gave a presentation on the East Coast Scenario Planning exercise. This effort was initially modeled after the PFMC scenario planning work, but with additional emphasis on deepening the understanding and implications of different possible outcomes resulting from climate change. Ms. Kerns described the scenarios and the process used to develop them to this point. Moving forward, this effort will focus on application, beginning with an evaluation of whether existing processes and management tools are adequate to address a range of climate change futures.

Mr. Bill Tweit (NPMPC Vice-Chair) described the North Pacific Climate Task Force, and the development of approaches to respond to climate change and its effects. These approaches were described as: 1) short term tactical responses, 2) short term strategic responses, and 3) long term strategy and advice. These approaches are developed in three objectives that begin with an evaluation of how climate information makes its way into the fishery management process and where gaps exist, identifies pathways for including additional information and scenarios into the fishery management process, and identifies tools and actions that can enhance climate resilience and adaptation.

Ms. Kelly Denit (NMFS) presented on the development of guidance for using MSA Section 304(f) and the extension of a fishery beyond the jurisdiction of one Council—a likelihood as stocks shift due to climate change. The presentation highlighted 5 key components to the developing policy, including: 1) determining the geographic location of a fishery, 2) the initial designation of Council(s) to develop an

FMP, 3) criteria to trigger review of initial designation, 4) process to determine whether to revise a designation, and 5) consideration for transitioning to a revised designation.

CCC members raised questions regarding the types of management outcomes or tools that may arise from the East Coast and North Pacific efforts. Ms. Kerns emphasized the intention of the East Coast Scenario Planning effort to result in outcomes that assist with management. Mr. Tweit also indicated that a goal of the North Pacific effort is to assist with management in the face of climate change. With respect to the NMFS guidance on MSA Section 304(f), several CCC members expressed some concern with the process. In particular, several members asked whether there are examples of the East Coast Councils insufficiently addressing the matter of shifting stocks, and why new guidance was necessary. Other CCC members expressed considerations that would make the movement of an FMP from one Council to another difficult or problematic. For example, expertise regarding the management of a fishery resides with the current Council and transfer of an FMP to a different Council without the same expertise could be problematic for management of that fishery.

Outcomes/Action Items: None

DAY 2 – WEDNESDAY, OCTOBER 19, 2022

Best Practices for the Future of Hybrid Operations

Ms. Stephanie Hunt (NMFS) presented an overview of current Council meeting practices, with a focus on best practices for hybrid meetings. Prior to the meeting, the Councils were asked to complete a survey about current practices for Council, committee, and advisory body meetings. The survey found that most Council meetings are currently being held in person with virtual participation options. While all Councils currently allow members to vote virtually, voting procedures vary greatly across Councils. Some require voice votes for members participating remotely while at least one Council requires all members to vote through the webinar regardless of whether they are participating remotely or in-person. The survey also found that there is wide variation in the format of advisory body meetings. While some Councils regularly hold advisory body meetings remotely, others discourage remote participation and cited challenges with hybrid formats. Ms. Hunt described several strategies that Councils have employed to create successful hybrid or virtual meetings.

All Councils currently allow virtual public participation, but there is variation in approaches across Councils. Most Councils reported that they have not seen a change in public participation, though allowing virtual comments may make it easier for individuals to comment on a single agenda item.

Ms. Hunt described some of the advantages and disadvantages of hybrid or remote meetings, as reported by the Councils. Top advantages included cost savings, allowing for participation even if sick, increased productivity (less time spent on travel), ease of stakeholder participation, reduced overall time and costs. Top disadvantages included technical challenges, increased staff workload, difficulty of virtual participation, lack of relationship building, time zone differences, and potential alienation of those without access to the technology needed to participate. Councils also reported that hybrid meetings can be more expensive to run because of the additional IT and administrative costs.

Following the presentation, the CCC discussed whether there is a need to document any hybrid meeting “best practices” at this time. The group generally agreed that it is too early to adopt uniform processes for holding hybrid meetings. While the majority prefer to hold more in-person meetings than virtual, in some cases it is cost effective to hold short and to the point virtual meetings. CCC members emphasized that Councils need to maintain flexibility to hold meetings in the most effective way possible.

The CCC also discussed challenges with getting full engagement and participation from virtual participants in hybrid meetings. Some members noted that it can be hard to tell if virtual participants are actually present and paying attention. One CCC member expressed frustration that NMFS staff have been participating in most meetings by webinar even when the meetings are held in convenient locations requiring minimal travel. This has caused problems and delays, particularly during the stock assessment process. Another CCC member noted that NMFS staff often seem to have difficulties with audio quality, webinar connections, screen sharing, etc. when participating or presenting remotely. The CCC encouraged NMFS to consider developing internal best practices for remote participation to address these issues and facilitate more effective participation in hybrid meetings. The CCC also recommended that NMFS work with the Councils to ensure that key participants are able to attend meetings in person.

Outcomes/Action Items:

1. No immediate action items were identified. Councils and NMFS may revisit this topic at a future meeting.
2. The CCC encouraged NMFS to (1) consider developing internal best practices for remote participation in meetings and (2) develop policies to ensure that key participants are able to attend meetings in person.

Preventing Harassment in Councils

Model Policies

Mr. Adam Issenberg (NOAA Office of General Counsel) presented two model policies for preventing harassment in Councils. These were developed in response to a CCC request in 2019. The Council staff model policy addresses situations where the employee is the alleged victim. The Council process participant model policy provides guidance on addressing allegations of harassment experienced by participants in the Council process other than staff (e.g., Council members, AP members, SSC members, consultants, etc.). Mr. Issenberg told the CCC that there is probably room for adaptation for each Council to adapt these policies and determine the vehicle for implementation. They can be standalone policies or integrated into the Administrative Handbook or Council Statement of Organization Practices and Procedures (SOPP). Mr. Issenberg stated they plan to continue to work with the regional Council Executive Directors to operationalize and implement these with various checklists or potential forms that will involve implementing procedures.

Harassment Training Plan

Ms. Stephanie Hunt (NMFS) provided a summary of the interactive training course that will be made available to Councils for supervisors, employees, and process participants. The training will be launched in early November 2022 with a hard deadline for completion of training by March 29, 2023. She requested that each Council send the agency a participant contact list. Ms. Hunt noted that the training package that was purchased also has diversity and inclusion training options and managing biases. She encouraged the regional Council Executive Directors to look at other trainings that you may want to consider for staff.

A member of the CCC asked what groups they envisioned taking the training. Ms. Hunt stated they envisioned Council staff, Council members, and potentially the chairs and vice-chairs of advisory panels. Once they receive the draft list of training participants, they could provide updates to the regional Councils regarding who had completed the training. Another member of the CCC stated some professional fisheries organizations had come up with a professional behavior outline or code of conduct best practices. These best practices include items such as who to go to if there is a problem.

Next a member of the CCC asked what happens after March 29th, 2023. Ms. Hunt responded they envisioned that a shared responsibility would be necessary to train folks about harassment when new

members are onboarded. A committee member responded that perhaps new Council members could receive this training during their orientation.

Outcomes/Action Items:

1. Councils should work with Mr. Adam Issenberg and Ms. Sandi Soderstrom to incorporate harassment policies into Council policies.
2. Councils should provide Ms. Stephanie Hunt lists of participants (with contact info) for harassment training.

International Issues

Ms. Alexa Cole (NMFS) briefed the CCC on a wide range of international issues, including Indo-Pacific Strategy, Indo-Pacific Economic Framework, Marine Biodiversity of Areas Beyond National Jurisdictions (BBNJ), Marine Mammal Protection Act (MMPA) Import Provisions, Moratorium Protection Act, Maritime SAFE Act, WECAFC, and WTO Fisheries Subsidies Agreement.

With respect to BBNJ, the CCC emphasized the importance of Council participation in negotiations, data gathering, and related activities with international bodies that regulate fisheries shared by other countries. Ms. Cole noted that NMFS is doing their best to consult with councils whenever appropriate to ensure the best outcome possible from negotiations and activities with international fishery management bodies. The CCC expressed continued interest in being able to have effective participation on these matters.

Outcomes/Action Items: None

Equity and Environmental Justice

CCC EEJ Workgroup

Mr. Jose Montanez (MAFMC Staff) presented recommendations from the CCC's Equity and Environmental Justice (EEJ) Working Group (WG). The group met four times to outline actions to address components of the May 2022 CCC motion. The report includes draft terms of reference; examples of potential steps each Council and CCC could take to explore and address EEJ; alternative strategies for convening an EEJ workshop; development of a peer-reviewed journal article; and major points for consideration from Councils' comments on the Draft NMFS EEJ Strategy. The WG requested approval of the draft terms of reference (TOR), CCC's guidance on objectives for a workshop, and postponement of the peer review journal article. The CCC endorsed formation of a permanent EEJ WG and approved the draft terms of reference as presented. The CCC also agreed with the WG's recommendation to postpone plans to publish a peer reviewed journal article. EEJ WG activities moving forward could continue to define workshop scope, narrow objectives and develop a budget and timeline as identified in the report.

Outcomes/Action Items:

1. The CCC agreed to formally establish the Equity and Environmental Justice Working Group. The CCC approved the proposed terms of reference for the WG and recommended that they meet at least once a year (virtually or in person).
2. The CCC will convene virtually to further discuss and address other aspects of the working group's report and recommendations.

NMFS EEJ Strategy Updates

Mr. Sam Rauch presented an update on the NMFS EEJ Strategy. NMFS extended the public comment period on the National EEJ Strategy from August 30 to September 30 and anticipates producing a final

draft strategy by early 2023. The NMFS EEJ Working Group continues to address comments received and will begin drafting the regional implementation plans once the national strategy is finalized. Rauch acknowledged the need to identify who the underserved communities are.

NMFS, like the Councils, is faced with funding challenges for EEJ. Funding for EEJ is again being included in the FY2023 budget request. However, Rauch noted that there are activities that can be undertaken and objectives achieved without an increase in funding. Currently, the NMFS Science Centers are working with their counterparts to pursue better data to identify social indicators to help characterize and define underserved communities.

NMFS was asked if the agency reviewed unjustified regulations that are not reasonable and/or practical that unfairly impact fishing communities. For example, unjustified equity and community impacts resulting from ESA-related measures implemented in the swordfish fishery. Mr. Rauch noted the agency continues to review their regulatory regime and that the Councils and NMFS should consider National Standard 8 and underserved communities in the rule making process minimizing or avoiding unnecessary impacts to fishing communities and underserved communities.

Outcomes/Action Items: None

America the Beautiful (ATB) Initiative

CCC Area-Based Management (ABM) Subcommittee Update on Final Report and GIS Work

Mr. Eric Reid, Chair of the CCC Area-Based Management (ABM) Subcommittee, provided an update of the work of the subcommittee. He reviewed the membership, Terms of Reference, and meetings since May (including one with CEQ). The CEQ meeting with agencies was productive, and there was a lot of interest in the subcommittee's work. The subcommittee continues to revise and refine the report on conservation areas in the U.S. EEZ while awaiting additional GIS data. On behalf of all of the Councils, the NEFMC executed a contract with the Pacific States Marine Fisheries Commission to assemble the spatial data, identify gaps, calculate total area coverage for the tables, and prepare the maps and figures of the conservation areas. Mr. Reid asked the CCC when they might want to receive the final report, either when completed in the next few months (~January 2023) or hold off until the May CCC meeting. He also asked where the CCC would like to house the report, and whether or not the information should be periodically reviewed (e.g., every 5 years). Work continues on finalizing the report and preparation of a journal article. The subcommittee is looking to have a press release on the final document when it is completed and made publicly available.

CCC members agreed that sooner is better to get out the information and be the lead in releasing accurate information on how much area is protected. The CCC understood urgency of this mission when it formed the subcommittee. CCC members also felt that the final report should be posted on the fisherycouncils.org website. Concern was raised about posting a grey literature report prior to submitting a journal article, but it was clarified that this is not a factor for most journals. It was also noted that the GIS data may need to be publicly available for some journals. The CCC decided that in addition to posting the report on the all-council website as soon as it is available, there should be a single press release at the time the final report is posted. While there was discussion about hosting the GIS data, the CCC decided to ask the subcommittee to figure out the best way to house the database, taking into account cost-effectiveness and accessibility for use and ability to update in the future. Regarding posting the fisherycouncils.org website, the CCC endorsed plans for the Council Communications Group to develop a new page for posting workgroup reports and work products.

Outcomes/Action Items:

1. A joint press release will be developed once the final report is completed and made publicly available.
2. The ABM Subcommittee report will be posted on the all-council website (www.fisherycouncils.org) once it is finalized. The Council Communications Group will work on developing a new page(s) for housing CCC committee/workgroup reports and work products.
3. The ABM subcommittee will discuss the best way to house the database, taking into account cost-effectiveness and accessibility for use and ability to update in the future.

NMFS Update on Interagency Effort

Mr. Sam Rauch (NMFS) provided an update on interagency efforts to address the America the Beautiful (ATB) initiative. ATB has six areas of focus early in the process: 1) support safe outdoor opportunities in nature-deprived communities, 2) support Tribally led conservation priorities, 3) expand collaborative conservation efforts, 4) increase access to outdoor recreation, 5) incentivize and reward voluntary efforts, and 6) create jobs by investing in restoration and resilience. The agencies are still working on developing a definition of "conservation," but Mr. Rauch anticipates that the final product will be more of a framework which identifies hallmarks of conservation, rather than a strict definition of conservation. Mr. Rauch said he appreciates the efforts of the CCC and Councils, which have been helpful to note complexities and benefits of fishery conservation efforts.

The ATB framework of conservation is not complete, and a timeline has not been specified. The conservation Atlas is in development with a beta version of the Atlas planned for December 2022. The beta version will likely only examine some of the council areas as examples to see what might fit in the framework of conservation. The Atlas could also serve as a platform for conservation stories. There is a new advisory committee being developed as part of the ATB effort – the Marine and Coastal Area-based Management Federal Advisory Committee (FAC). Mr. Rauch encouraged CCC members to apply and noted that the call for nominations will occur in the fall. The FAC will be co-led by NOS (John Armor) and NMFS (Kelly Denit). A Federal Interagency Committee for outdoor recreation was re-established in July. Additional efforts were mentioned: conservation.gov, NOAA actions based on FR comments, and partnership with Aquarium Conservation Partnership.

Outcomes/Action Items:

1. CCC members are encouraged to apply for the Marine and Coastal Area-based Management Federal Advisory Committee.

Northeast Regional Marine Fisheries Habitat Assessment

Ms. Jessica Coakley (MAFMC staff) provided a presentation on the Northeast Regional Habitat Assessment – a collaborative, multi-disciplinary project to develop decision support products for marine fish habitat management. Overall, the CCC was impressed by the assessment and the broad utility of this project. Some Councils expressed interest in this work and asked about the potential for transferability of these types of approaches to other regions.

Outcomes/Action Items: None

CCC Committee Updates

CCC Habitat Workgroup

Ms. Jessica Coakley (MAFMC Staff), chair of the CCC Habitat Workgroup, provided an update on workgroup activities since the last presentation in May 2022. The workgroup met this past July and is scheduled to meet again in November via webinar, and its subgroups have been very active, including

the Wind, Fishery Science Center Engagement, and 2023 Meeting Planning Subgroups. Lastly, the workgroup reported that the "deep dives" on specific topics or Council initiatives have been well received, so those will continue into 2023.

Outcomes/Action Items: None

7th Scientific Coordination Subcommittee Meeting

Ms. Diana Evans (NPFMC Staff) provided a summary of key findings of the SCS7 meeting. The meeting, which was held in August in Sitka, Alaska, focused on adapting fisheries management to a changing ecosystem. The key findings were as follows:

1. Councils need to start preparing now for increasingly complex management decisions due to climate change. This has profound implications for the next 20 years. We need pathways to sustain fisheries in a future non-stationary marine environment.
2. Investment is needed in the development of new data collection and analytical tools that are responsive to changing conditions. We need to find adaptations options tailored to regional differences and development of a suite of models of differing levels of complexity. Collaboration across regions may provide efficiencies.
3. SSCs and councils need to be prepared to transition towards a more sophisticated toolbox. Need to start scenario planning to avoid reactive responses. We also need to create more opportunities for strategic and creative approaches
4. Stakeholder engagement will be critical for adaptive management to be successful. This will require engagement from all stakeholders. More complex models will need to be clearly communicated.

The SCS7 provided additional recommendations for future SCS workshops, including in person meetings, breakout sessions, council member participation, biennial timing, and additional ways to communicate among the SSC in the off-year. The topic for the next meeting was discussed, possibly following up on the examples of the use of model outcomes for use in fishery management advice. The next SCS host Council has not yet been determined, but hopefully this will be determined by next May. Materials from the SCS7 are available online. A full report of the meeting, and proceedings of the meeting, will be provided at the May 2023 CCC meeting. A member suggested that the CCC take a deeper dive into the information and climate resilience in May.

Outcomes/Action Items:

1. The CCC recommended including a more in-depth discussion of the SCS meeting outcomes on the May 2023 CCC Meeting agenda.

CCC Communications Group

Ms. Mary Sabo (MAFMC Staff) provided an update on the CCC Communications Group. This group was formally established in 2012 and is composed of the communication or public affairs leads from each Council.

Ms. Sabo presented a joint meeting calendar which was developed by the Communications Group in response to a CCC request at the October 2021 meeting. The new calendar displays Council and SSC meetings as well as joint Council events such as CCC, CMOD, and SCS meetings. Ms. Sabo walked through several features of the calendar, including options to filter events, customize views, and sync meetings to Outlook or Gmail calendars. Each group member will be responsible for adding their own Council's meetings. The calendar will be monitored by the CCC host Council, who will send out

periodic reminders to group members to update their calendar of events. The CCC approved the calendar as presented.

Ms. Sabo also presented a proposal for an in-person meeting of the Communications Group. The group last met in-person in May 2018. Meetings provide valuable forum to learn from each other and develop public affairs strategies on issues of importance to the CCC. The proposal included a list of potential meeting topics for CCC consideration and feedback. The CCC noted that the list of topics is ambitious for a 2-3 day meeting and that some prioritization may be needed. After some discussion, the CCC requested that the group prioritize the following topics when developing a meeting agenda (numbering maintained from original proposal):

1. Communication tools, technologies, and approaches.
2. Engaging the public on complex management actions
3. Advisory panel issues including recruitment and how to keep members engaged
6. Communicating Council success and challenges

The other, non-prioritized topics may still be included on the agenda as time permits. One CCC member recommended that the group address public hearing format and approaches as part of Topic #2. The group has not yet determined dates or a location for the meeting. Although there was some discussion of meeting in conjunction with the May 2023 CCC meeting, this is likely not feasible due to staffing and logistical constraints. As the CCC host for 2023, the Gulf Council will lead the planning for the meeting. The CCC endorsed moving forward with planning for an in-person meeting. A detailed agenda will be circulated for review and approval by the Executive Directors.

Finally, Ms. Sabo noted that the Communications group had recently revised the regional fishery management council flyer with updated "Quick Facts" from the latest NMFS reports.

Outcomes/Action Items:

1. The CCC approved the new joint meeting calendar
2. The CCC supported moving forward with planning an in-person meeting of the Communications Group in 2023 and provided input on the proposed list of meeting topics, recommending that the communications group focus on topics 1, 2, 3, and 6.

FAO Committee on Fisheries Summary Report

Mr. Greg Stunz, (Gulf Council Vice-Chair) provided a report on the 35th meeting of the Committee on Fisheries (COFI). The meeting was held (primarily virtually) on September 5-9 in Rome, Italy. A subsidiary body of the United Nations (UN) Food and Agriculture Organization (FAO) Council, COFI serves as a global intergovernmental forum for examining major international fisheries and aquaculture issues. Mr. Stunz highlighted several relevant areas of focus from the meeting, including

- Preventing and deterring IUU fishing,
- Addressing climate change and providing support to vulnerable countries
- Developing a Global Biodiversity Framework to address area-based management tools in fisheries and aquaculture for biodiversity conservation.

Additionally, the Committee endorsed a proposal to form a new subcommittee of fisheries management to allow in depth dialogue on essential matters relative to fisheries management.

Mr. Stunz noted that there is a new council representative every 2 years, so it takes effort to get up to speed. He suggested that the CCC should discuss how best to prepare the representative prior to the next

meeting. For example, discuss with prior representatives, and dialogue with the U.S. delegation on issues to bring forward to the meeting.

Outcomes/Action Items: None

DAY 3 – THURSDAY, OCTOBER 20, 2022

Update on National Standard 1 Technical Guidance Workgroups

Dr. Richard Methot (NMFS) provided an update on National Standard 1 technical guidance efforts. Final reports from Subgroups 2 and 3 were published in July 2020 and September 2022, respectively. This update focused primarily on the status of Subgroup 1, which is addressing maximum sustainable yield (MSY) reference points and status determination criteria (SDC). Subgroup 1 has completed an initial draft that is out for review by the Science Centers. The document will include a review of underlying concepts, provide several tiers for addressing MSY and SDCs, and address various approaches for estimating SDC values. Addressing stock-recruit relationships, particularly the range of situations nationwide, has proven challenging. Guidance will be provided for revising SDCs in response to prevailing conditions and dealing with data limited situations.

The CCC requested clarification on the importance of age and growth information and spatial complexity for stocks such as scallops. Age and growth are important, and information for similar species can be helpful for data limited stocks. Additional work is needed to determine how sessile stocks like scallops can be best addressed. One CCC member expressed concern that using trailing averages could keep the perspective on the past and limit ability to respond to the future. Dr. Methot responded that the intent would be to forecast reference points based on anticipated future conditions. Another concern raised was that stocks experiencing productivity shifts could be viewed as declining stocks. Added precaution in the short term may be appropriate if a stock is experiencing productivity shifts, as it may be difficult to understand the long-term implications. In some regions, data poor stocks dominate and are the source of ongoing management frustration. Precaution based on uncertainty appears to be added at multiple levels for data poor stocks, often despite anecdotal information that stocks are in acceptable shape. Additional flexibility in required management parameters could help address chronic data limited stocks.

Outcomes/Action Items: None

FishWatch Update

Ms. Rebecca Ferro (NMFS) provided an update on FishWatch and the migration of the site to the NMFS website. This new site will retain existing functionality and content and will be housed under the "Sustainable Seafood" section of the NMFS site. Additional functionality may be added that focuses on the human dimension of sustainable seafood. Additionally, the NMFS site contains profiles of species caught in U.S. waters. Information from FishWatch will be included in these profiles. The schedule for migrating FishWatch to the new site will be January of 2023.

CCC members asked about the frequency of updates for information contained within FishWatch, such as the abundance of harvested species. Ms. Ferro indicated that this information would be updated annually. Other questions raised by CCC members asked who the target audience for FishWatch is and whether it would continue to be seafood consumers. Ms. Ferro indicated that consumers continue to be a target audience of FishWatch.

Outcomes/Action Items: None

Endangered Species Act (ESA) - Magnuson-Stevens Act (MSA) Integration

Ms. Kitty Simonds (Executive Director, WPFMC) provided the report of the working group formed at the May 2022 CCC meeting to consider changes to the ESA Policy Directive 01-117 to integrate ESA Section 7 with MSA. The working group was co-chaired by MAFMC and WPFMC and consisted of one staff member from each Council. The working group met twice and developed a redline version of the ESA Policy Directive addressing main issues that the CCC identified over the past year. Working group representatives also met with NMFS headquarters liaisons, Marian Macpherson (NMFS Office of Sustainable Fisheries [OSF]) and Marla Hamilton of (NMFS Office of Protected Resources [OPR]), to receive feedback on the potential changes.

The working group's redline changes focused on the following:

- Adding an overarching policy statement that NMFS will work in close coordination with the Councils through the MSA Council process to address fishery impacts on ESA-listed species, rather than relying exclusively on Reasonable and Prudent Measures (RPMs) and Reasonable and Prudent Alternatives (RPAs) resulting from consultations;
- Strengthening language for NMFS to involve Councils early in the consultation process and agreeing to a coordinated schedule for Council involvement, as well as removing some of the discretion from provisions that have allowed NMFS to limit Council involvement;
- Adding language for involving Councils in development of RPMs in addition to RPAs; and
- Adding language for resolving disputes during the coordination process in the event that disagreements arise on the Council's role and involvement.

The working group also included a placeholder in the redline version for NOAA General Counsel facilitating sharing of early draft Biological Opinions (BiOps) with Council staff as a mechanism for early NMFS-Council coordination. This was an issue that the CCC flagged on the January 2022 call, but NMFS has not yet provided a response on feasibility.

NMFS liaisons indicated that the redline version helps to provide a better understanding of the Council issues, and they plan to feed that information into the region-specific discussions. Recognizing NMFS' planned process, the working group recommended that the CCC recommend to NMFS that it adopt the redline version of the ESA Policy Directive and implement the changes as soon as possible prior to the regional coordination effort. The redline version developed by the working group addresses overarching policy issues that are applicable across all regions and various consultation situations. The CCC has been discussing these issues since last May, and implementing these changes would be an important first step to set the stage for the regional coordination effort.

Mr. Sam Rauch provided NMFS' feedback to the working group's redline version and their plans for next steps. Mr. Rauch noted that the redline version does not appear to consider changes to the ESA Policy Directive for situations in which consultations are triggered external to the Council process and there is limited time for Council involvement due to the ESA's 135 day timeframe for Section 7 consultations. Rauch indicated that NMFS does not want to reopen the Policy Directive to make changes until they complete region-specific discussions among OSF, OPR and Council staff. NMFS sent a questionnaire to the working group with a deadline to respond by November 4, 2022, and intends to convene regional discussions that are anticipated to be completed by early 2023. If the process is not completed by that timeframe, NMFS intends to report back to the CCC at its May 2023 meeting.

Regarding the redline changes developed by the working group, Rauch agreed that the explicit inclusion of RPMs would be beneficial as these may create a similar workload for the Councils as RPAs. He noted concerns with the elevation clause due to the potential one-way nature of elevating issues as there would be no higher entity to which issues could be elevated on the Council's side, and because decisions for ESA consultations are delegated to the Regional Administrators. In some consultation situations, there may not be time to involve Councils early due to the statutory timelines, but in other situations involvement may be accommodated.

Mr. Rauch also indicated that NMFS would like to avoid creating a process in which a preliminary draft BiOp is shared in secret with the Council as it is contrary to the public, transparent process of the Councils. However, NMFS could engage Council staff in confidential discussions on a case-by-case basis. One CCC member noted that the Councils were trying to find a way to be involved early while addressing NMFS' concern that draft BiOps could not be shared with the Councils without making it a public document due to FOIA issues. He clarified that the Councils are not trying to keep the early drafts secret. Mr. Rauch indicated that NMFS would be reluctant to release a preliminary draft to the Council because it would extend the consultation timeline and raise litigation concerns, but NMFS could consider discussing certain sections with the Council without sharing preliminary drafts that are not public. Ms. Simonds clarified that the redline version includes language that adds a process for NMFS to meet with Council and/or Council staff as early as possible to discuss potential changes and impacts to fishery management actions if NMFS is unable to share the draft BiOp.

In response to a question regarding differences between MSA and ESA with respect to confidential data access, Mr. Rauch clarified that the ESA does not have a blanket confidential data clause that exists under MSA and that protected species data may not be confidential. The CCC also received clarification from Mr. Adam Isenberg that facilitating the sharing of confidential documents (such as preliminary draft BiOps) is not the purpose of attorney-client privilege. Mr. Marcos Hanke commented that the ESA process is important but there is room to improve, noting that the Councils should be given the first opportunity to develop management measures. The CCC adopted the working group recommendation and discussed that NMFS should meet with the working group once they review the redline changes.

Outcomes/Action Items:

1. The CCC adopted the Working Group report and recommended that NMFS review the redline version of the ESA Policy Directive and implement the changes drafted by the working group as soon as possible. The proposed changes are intended to improve the overarching policy that is applicable across all regions and various consultation situations and is an important first step that should be taken prior to the regional coordination effort that will be led by NMFS.

Wrap Up and Other Business

Dr. Chris Moore (MAFMC Executive Director) presented a summary of outcomes and action items from the meeting. Several corrections and additions were made by CCC members.

Mr. Dale Diaz (GMFMC Chair) updated the CCC on the meeting schedule for 2023. The next meeting will be held May 23-25, 2023. It will be hosted by the Gulf Council at the Key West Marriott Beachside Hotel in Key West, Florida. The fall meeting is tentatively scheduled for October 11-13, 2023 and will be hosted by NMFS in Washington, D.C. Updates will be posted at http://www.fisherycouncils.org/ccc-meetings as they become available.

Council Coordination Committee Meeting
October 18 - 20, 2022

Holiday Inn Capitol Hill
550 C St SW, Washington, DC 20024

Agenda

Tuesday, October 18, 2022 | 1:00 - 5:30 pm EST	
1:00 - 1:20 pm	Opening of Meeting • Welcome and Introduction (Mike Luisi) • Approval of Agenda
1:20 - 1:50 pm	NMFS Updates & Priorities • Opening Remarks (Janet Coit) • Other policy updates (Kelly Denit) o Allocation Policy Update o Confidentiality Rule Update • Seafood Strategy update (Michael Rubino)
1:50 - 2:30 pm	FY23 Budget Breakdown (Jim Landon, Brian Pawlak)
2:30 - 3:00 pm	NMFS Science Update (Kristen Koch)
3:00 - 3:15 pm	*BREAK*
3:15 - 4:00 pm	Legislative Outlook (David Whaley) Report from Congressional Staff and Members Staff
4:00 - 5:15 pm	Climate Governance & Scenario Planning Updates • East Coast Scenario Planning (Toni Kerns) • North Pacific Climate Task Force (Bill Tweit) • NMFS Climate Governance Policy (Kelly Denit)
5:15 - 5:30 pm	Public Comment
5:30 pm	*ADJOURN DAY 1*
Wednesday, October 19, 2022 | 9:00 am - 5:00 pm EST	
9:00 - 9:45 am	Best Practices for the Future of Hybrid Operations • Discussion of Hybrid Council Operations (Kelly Denit)
9:45 - 10:45 am	Preventing Harassment in Councils • Discuss and finalize Harassment Policies for Council Staff & Council Process Participants (Adam Issenberg, Sandi Soderstrom)
10:45 - 11:00 am	*BREAK*
11:00 - 11:30 am	International Issues • Marine Biodiversity of Areas Beyond National Jurisdictions (BBNJ), Indo-Pacific Strategy, NMFS Response to WPFMC concerns (Alexa Cole)
11:30 - 12:30 pm	Equity and Environmental Justice (EEJ) • CCC EEJ Workgroup (Jose Montanez) • NMFS EEJ Strategy Updates (Sam Rauch)

12:30 - 2:00 pm	*LUNCH BREAK*
2:00 - 3:00 pm	America the Beautiful (AtB) Initiative • CCC Area-Based Management (ABM) Subcommittee Update on Final Report and GIS Work (Eric Reid) • NMFS Update on Interagency Effort (Sam Rauch)
3:00 - 3:30 pm	Northeast Regional Marine Fisheries Habitat Assessment (NRHA) Presentation (Jessica Coakley)
3:30 - 3:45 pm	*BREAK*
3:45 - 4:45 pm	CCC Committee Updates • CCC Habitat Workgroup (Jessica Coakley) • 7th Scientific Coordination Subcommittee Meeting (Diana Evans) • CCC Communications Workgroup – Presentation on Cross-Council Meeting Calendar, and In-Person Meeting Proposal (Mary Sabo) • Committee on Fisheries (COFI) Summary Report (Greg Stunz)
4:45 - 5:00 pm	Public Comment
5:00 pm	*ADJOURN DAY 2*
Thursday, October 20, 2022 | 9:00 am - 12:30 pm EST	
9:00 - 10:00 am	Update on National Standard 1 Technical Guidance Workgroups • Final Subgroup 3 Tech Memo on Data-Limited ACLs and Draft Subgroup 1 Tech Memo on Reference Points (Kelly Denit, Richard Methot)
10:00 - 10:30 am	FishWatch Update (Rebecca Ferro) • Live demo of FishWatch.gov
10:30 - 11:15 am	Endangered Species Act - Magnuson-Stevens Act (ESA - MSA) Integration • Update and Recommendations from CCC Working Group addressing NMFS Policy Directive 01-117 (Kitty Simonds) • NMFS Update (Sam Rauch)
11:15 - 11:30 am	*BREAK*
11:30 - 11:45 am	Public Comment
11:45 - 12:30 pm	Wrap Up and Other Business • CCC Outcomes and Recommendations • 2023 CCC Meetings
12:30 pm	*ADJOURN DAY 3*

U.S. Regional Fishery Management Councils

November 29, 2022

Samuel D. Rauch III
Deputy Assistant Administrator for Regulatory Programs
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Dear Mr. Rauch:

At the October 2022 meeting, the CCC reviewed the report of the working group formed at the May 2022 CCC meeting to consider changes to the ESA Policy Directive 01-117 to integrate ESA Section 7 with MSA. The working group created a redline version of the Policy Directive with changes to help resolve the high priority issues identified by the Councils. The CCC recommended that NMFS review the redline version of the ESA Policy Directive and implement the changes drafted by the working group as soon as possible.

In providing preliminary feedback on the redline changes at the CCC meeting, you indicated that NMFS does not want to reopen the Policy Directive to make changes until they complete region-specific discussions among NMFS Sustainable Fisheries, Protected Resources and Council staff. However, the proposed changes are intended to improve the overarching policy that is applicable across all regions and various consultation situations, including consultations that are triggered external to the Council process. The CCC believes these redline changes are an important first step that should be taken prior to the regional coordination effort that will be led by NMFS.

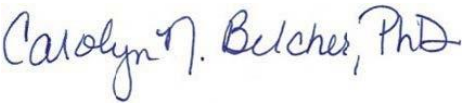
You also indicated that more specific feedback on the redline changes would require more time to review. Given this, the Executive Directors would like to schedule a call with you in January 2023 to discuss the redline changes once a more detailed review has been completed.

Please reach out to Kitty Simonds to schedule the call in January 2023.

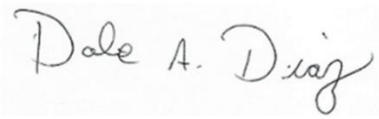
Sincerely,

Mike Luisi, Chair
Mid-Atlantic Fishery Management Council

Eric Reid, Chair
New England Fishery Management Council



Dr. Carolyn Belcher, Chair
South Atlantic Fishery Management Council



Dale Diaz, Chair
Gulf of Mexico Fishery Management Council

Marcos Hanke, Chair
Caribbean Fishery Management Council

Simon Kinneen, Chair
North Pacific Fishery Management Council

Marc Gorelnik, Chair
Pacific Fishery Management Council

Archie Taotasi Soliai, Chair
Western Pacific Fishery Management Council

2022 FALL NRCC MEETING AGENDA

Hilton Garden Inn – 100 Boardman Street, Boston MA

All times are approximate

Monday, October 24

9:00 a.m. – 9:15 a.m.

1. Welcome, Introductions, Announcements
   (Reid, Sullivan)

9:15 a.m. – 10:15 a.m.

2. Catch Accounting and Data Management
   Discussion leader: Gouveia
   - Update on Fishery Dependent Data Initiative (FDDI) and Catch Accounting and Monitoring System (CAMS)
   - Data concerns and questions (data quality, discard estimation, etc.)

10:15 a.m. – 10:45 a.m.

3. Observer Program Performance
   Discussion leader: McArdle
   - Report on realized observer coverage and program challenges

10:45 a.m. – 11:00 a.m. Break

11:00 a.m. – 11:30 a.m.

4. Standardized Bycatch Reporting Methodology 3-Year Report
   Discussion leader: McArdle

11:30 a.m. – 11:45 a.m.

5. Did Not Fish Reports
   Discussion leader: Moore

11:45 a.m. – 1:00 p.m. Lunch – Offsite or delivery

1:00 p.m. – 3:00 p.m.

6. Stock Assessments
   Discussion leader: Simpkins
   - NRCC Assessment Working Group update
   - Stock assessment schedule

3:00 p.m. – 5:00 p.m.

7. East Coast Scenario Planning – October 2022 Update and Discussion of Applications Phase
   Discussion leader: Core Team
   - Update on September manager sessions
   - November/December Council and Commission Meetings
   - Summit Meeting in early 2023: Logistics, overall purpose, and expected outcomes
   - Addressing the recommendations: What happens after the Summit?

5:00 p.m. Adjourn Day 1

7:00 p.m. – Dinner at Antique Table, 19 Crest Ave, Winthrop, MA

Tuesday, October 25

9:00 a.m. – 11:00 a.m. (break as needed)
8. Stock Assessments (continued)
   Discussion leader: Simpkins
   - Continuation of Day 1 discussion

11:00 a.m. – 11:30 a.m.
9. Atlantic Sturgeon Action Plan
   Discussion leader: Nies
   - Coordination of action to implement gillnet measures in the Sturgeon Action Plan.

11:30 a.m. – 12:00 p.m.
10. Port Sampling
   Discussion leader: Brown
   - Update on efforts to assess impacts of reduced sampling and/or approaches for sampling prioritization.

12:00 p.m. – 12:30 p.m.
11. Offshore wind
   Discussion leader: Burns/Lipsky
   - Update on offshore wind activities.

12:30 p.m. – 1:00 p.m.
12. Meeting Wrap-Up and Other Business
   - Complete any unfinished discussions or unresolved new business
   - Review action items and assignments
   - Identify Spring 2023 meeting date (GARFO chair)
   - Adjourn meeting

1:00 p.m. Meeting adjourns

From: David Gouveia - NOAA Federal <david.gouveia@noaa.gov>
Sent: Wednesday, November 30, 2022 12:38 PM
To: Liz Sullivan - NOAA Federal <liz.sullivan@noaa.gov>
Cc: Tara Trinko - NOAA Federal <tara.trinko@noaa.gov>; Muffley, Brandon <bmuffley@mafmc.org>; Bland, Sarah <Sarah.Bland@noaa.gov>; Spud Woodward <swoodward1957@gmail.com>; Cimino, Joseph <Joseph.Cimino@dep.nj.gov>; Moore, Christopher <cmoore@mafmc.org>; Townsend, Wes <pakafish1@yahoo.com>; Kerns, Toni <tkerns@asmfc.org>; Luisi, Michael <michael.luisi@maryland.gov>; Brown, Russ <russell.brown@noaa.gov>; Bellavance, Rick <rickbellavance@gmail.com>; Pentony, Mike <Michael.Pentony@noaa.gov>; Simpkins, Michael <michael.simpkins@noaa.gov>; Laura Hansen - NOAA Federal <laura.hansen@noaa.gov>; Sean Hayes - NOAA Federal <sean.hayes@noaa.gov>; Beal, Robert <rbeal@asmfc.org>; Nies, Thomas <tnies@nefmc.org>; Cabana, Nicole <nicole.cabana@noaa.gov>; Kellogg, Chris <ckellogg@nefmc.org>; Reid, Eric <ericreidri@gmail.com>; Lisa Kerr <lkerr@gmri.org>; Rago, Paul <paulrago22@gmail.com>; Hare, Jon <jon.hare@noaa.gov>; Campfield, Patrick <pcampfield@asmfc.org>; Debbie Welch - NOAA Federal <debbie.welch@noaa.gov>; Collins, Kathy <kcollins1@mafmc.org>; O'Leary, Joan <joleary@nefmc.org>; Katherine StCyr <katherine.stcyr@noaa.gov>; Kelly, Moira <moira.kelly@noaa.gov>; Burns, Peter <Peter.Burns@noaa.gov>; Katherine McArdle - NOAA Federal <katherine.mcardle@noaa.gov>; Brant McAfee - NOAA Federal <brant.mcafee@noaa.gov>; Ryan Shama - NOAA Federal <ryan.shama@noaa.gov>; Spencer Talmage - NOAA Federal <spencer.talmage@noaa.gov>; Ferrio, Cynthia <cynthia.ferrio@noaa.gov>; Larry Alade - NOAA Federal <larry.alade@noaa.gov>; Carmichael, John <john.carmichael@safmc.net>; Kiley Dancy <kdancy@mafmc.org>; Andrew Lipsky - NOAA Federal <andrew.lipsky@noaa.gov>; Christel, Douglas <douglas.christel@noaa.gov>; Brian Linton - NOAA Federal <brian.linton@noaa.gov>
Subject: Re: NRCC: Fall 2022 Action Items - Final

Two action items assigned to GARFO following the October NRCC meeting have been completed. The names of the tasks and the corresponding file names for the responses are:

1. Permit/VTR data request for the Did Not Fish Reports task (NRCC For-Hire Request Nov 2022.pdf); and
2. Contracting questions regarding the Port Sampling Contract task (NRCC Fall 2022 Meeting Action Item_Port Sampling Contract.pdf).

If you have any questions, just give me a shout.

- Dave

Number of vessels that were issued for-hire and recreational permits in 2020 and the number that submitted at least one VTR in that year.

Permit Type – Recreational or For-Hire (F-H)	No. of permitted vessels	No. of vessels that reported a F-H or rec trip for that species	% of vessels that reported
Tilefish Private Rec	447	9	2
Tilefish F-H	628	34	5
Summer Flounder F-H	885	250	28
Black Sea Bass F-H	879	283	32
Scup F-H	785	191	24
Mack, Squid, Butt F-H	781	82	10
Bluefish F-H	885	248	28
NE Multispecies F-H	750	201	27
All For-Hire combined	998	416	42

Number of vessels that were issued for-hire and recreational permits in 2021 and the number that submitted at least one VTR in that year.

Permit Type – Recreational or For-Hire (F-H)	No. of permitted vessels	No. of vessels that reported a F-H or rec trip for that species	% of vessels that reported
Tilefish Private Rec	779	25	3
Tilefish F-H	701	48	7
Summer Flounder F-H	953	263	28
Black Sea Bass F-H	947	308	33
Scup F-H	820	183	22
Mack, Squid, Butt F-H	828	96	12
Bluefish F-H	947	244	26
NE Multispecies F-H	812	190	23
All For-Hire combined	1,075	454	42

Number of vessels that were issued for-hire and recreational permits in 2022 and the number that submitted at least one VTR in that year.

Permit Type – Recreational or For-Hire (F-H)	No. of permitted vessels	No. of vessels that reported a F-H or rec trip for that species	% of vessels that reported
Tilefish Private Rec	810	35	4
Tilefish F-H	665	45	7
Summer Flounder F-H	870	283	33
Black Sea Bass F-H	874	318	36
Scup F-H	753	199	26
Mack, Squid, Butt F-H	750	68	9
Bluefish F-H	864	242	28
NE Multispecies F-H	745	184	25
All For-Hire combined	971	458	47

Reporting for Recreational Tilefish Anglers

Recreational vessel operators will be required to submit electronic vessel trip reports (eVTRs) through a NMFS-approved electronic reporting system within 24 hours of returning to port from any recreational trip targeting or retaining tilefish. These requirements apply to private recreational vessels and for-hire vessels taking private recreational fishing trips.

Reporting is required on any recreational trips when you target or retain tilefish. If the trip was targeting tilefish but you catch no tilefish, you still must complete an eVTR and report 0 for the number of fish caught, released, and retained.

Reporting for For-Hire / Charter trips

You are required to complete an eVTR for every fishing trip, whether the vessel is fishing in state or federal waters, or in another region of the country, such as Gulf of Mexico. This is true for all trips, no matter what species is being fished for or caught. Having an observer or at-sea monitor on board during a trip does not relieve you from this requirement.

An eVTR is required for any trip on a federally permitted vessel when you catch fish, or when your operations include activities that would support fishing, such as preparing to catch or harvest fish, or attempting to catch or harvest fish. All such fishing activities must be reported, even if no landings are made. The trip is the period of time during which these activities are conducted, beginning when the vessel leaves port and ending when the vessel returns to port.

You are required to report fishing trips even if no fish are caught or onboard if the following events occur:

If you begin a fishing trip, but must return to port before setting or retrieving gear because of issues like bad weather or mechanical problems, then you must still complete an eVTR. In this case, you must complete the information and enter “No Effort”.

If you make an unsuccessful trip, and don’t catch any fish, you must still complete an eVTR. In this case, you must complete all of the trip information and enter “No Catch” or “NC” in the species code field.

From: David Gouveia - NOAA Federal <david.gouveia@noaa.gov>
Date: Thursday, December 1, 2022 at 9:00 AM
To: Moore, Christopher <cmoore@mafmc.org>, Coakley, Jessica <jcoakley@mafmc.org>, Montanez, Jose <jmontanez@mafmc.org>, Cisneros, Karson <KCisneros@mafmc.org>
Cc: Mary Sabo <msabo@mafmc.org>
Subject: Surfclam/Ocean Quahog Transition to Fish Online eVTR Application

Chris et al -

I just wanted to provide you with a heads-up that later this morning we will be announcing the requirement for Atlantic surfclam and ocean quahog vessel operators to begin using the Fish Online eVTR application beginning with any trip started before or after February 1, 2023. Submission of paper logbooks as well as submissions using the Northeast Fishery Science Center's FLDRS clam application will no longer be accepted after February 1, 2023.

Background
As you know, on November 12, 2021, NOAA Fisheries implemented a recommendation from both the Mid-Atlantic and New England Fishery Management Councils to require federally permitted commercial fishing vessels to submit vessel trip reports electronically within 48 hours of the end of a trip. Clam vessels were excluded from the November 2021 mandatory eVTR implementation due to an inability of the NEFSC's Cooperative Research Branch to support installation of the FLDRS clam app to the entire clam fleet. Surfclam and ocean quahog ITQ permit holders presently complete a clam specific VTR logbook using either a paper logbook or the FLDRS clam eVTR application. GARFO has recently completed programming changes to its Fish Online eVTR application such that surfclam and ocean quahog vessels may now use it to fulfill their logbook reporting requirements. Vessel owners will have a period of 60 days to transition from paper and FLDRS to the new Fish Online clam eVTR. This 60 day period should begin once the clam eVTR has been finalized and fully tested to address any errors/bugs.

Fish Online is an electronic vessel trip report (eVTR) application that functions on all Windows, iOS, and Android devices including desktop computers, laptop computers, tablets and smartphones. In order to use Fish Online, users must first create a Fish Online user account, if one does not already exist.

Industry Support
If you receive any inquiries on how to create a Fish Online user account, you can either direct them to visit our website via the How to Create a Fish Online Account link or instruct them to call (978) 281-9188 or email the GARFO Vessel Reporting Helpdesk

Thank you and if you have any questions, just give me a shout.

- Dave

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David Gouveia
Assistant Regional Administrator
for Analysis and Program Support
National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, Massachusetts 01930
Phone: (978) 281-9280
E-mail: david.gouveia@noaa.gov

Seafreeze Ltd.

100 Davisville Pier
North Kingstown, R.I. 02852 U.S.A.
Tel: (401)295-2585

November 15, 2022

Tom Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill 2
Newburyport, MA 01950

Re: EBFM Committee/Public Information Workshop/ Georges Bank Ecosystem FMP

Dear Tom,

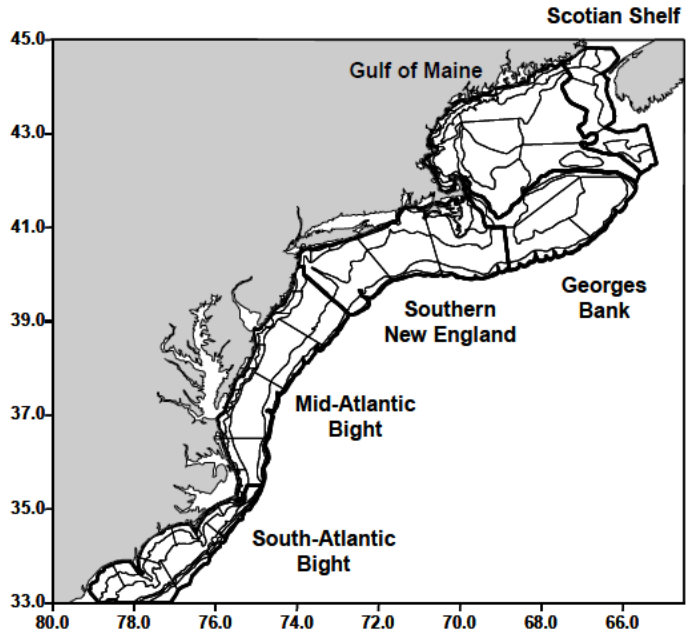
I am writing to express my concerns regarding the NEFMC initiative for a Georges Bank Ecosystem FMP that is currently being developed by the EBFM Committee MSE workshop process.

My first concern is related to the geographic range of what is being considered "Georges Bank". The "Georges Bank Ecological Production Unit" under consideration is far in excess of what is truly George's Bank and encompasses the entirety of Nantucket Shoals, south of Nantucket, all the way past Muskeget Channel to the eastern end of Martha's Vineyard, essentially a large portion of Southern New England and encompassing various important Southern New England Fisheries. The Great South Channel, which separates Nantucket Shoals from Georges Bank, is a natural delineation point which separates not only two very different geographic areas but also two very different ecosystems. According to the EBFM Public Information Workshop material and discussions, these two areas have "similar" ecosystem characteristics. However, it was also noted that the model being employed in the exercise has the parameters set by number of Ecosystem Production Units (EPU) desired in the outcome- the more EPUs selected as an output, the more defined each EPU will become.

Therefore, we request that an additional EPU output be added, so as to separate out what is truly Georges Bank from Southern New England. Georges Bank is an entirely different area than Southern New England, in both fishing practice, governing regulations, and ecosystem production. No captain has ever said he was headed to Georges and went fishing on the backside of Nantucket. There is also a reason that the regulated mesh areas do not allow for small mesh bottom trawls to operate east of Nantucket and on Georges Bank, other than in the small mesh exemption area- the ecosystem is different, with different species' mix, which the regulated mesh area is designed to acknowledge and protect. See https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/southern-new-england-exemption-area. Due to the minimal interaction with groundfish in the small mesh exemption area, small mesh is legal and allows for small mesh fishing for, example, the summer loligo squid fishery off of Nantucket. This is not Georges Bank.

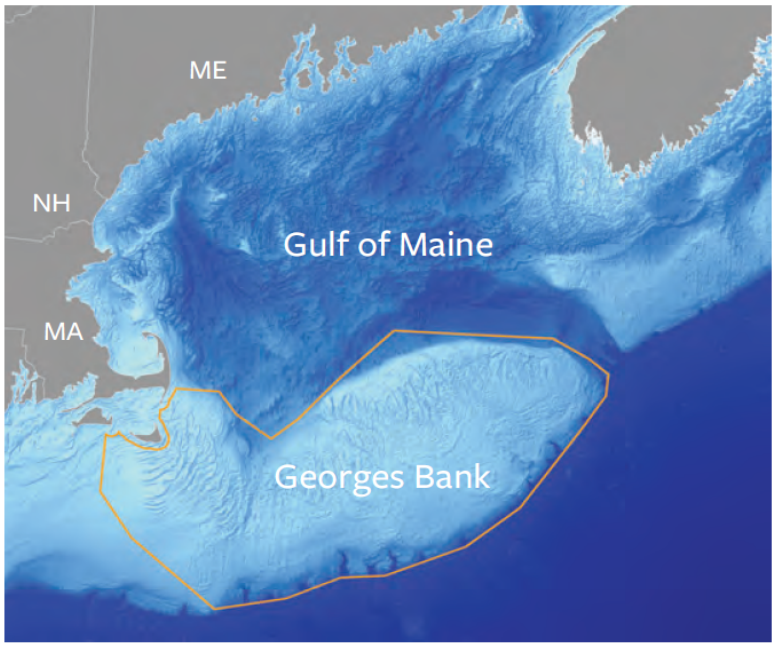
Additionally, previous ecosystem research has held Southern New England as a separate Ecosystem Production Unit than Georges Bank. See for example, the chart below from Link et. al.:

Figure 2.1. Map of the northwest Atlantic, including the major subregions.



[1]

This stands in contrast to the EBFM Georges Bank EPU materials below:



The Georges Bank EPU is indicated by the orange outline on the map. [2]

From an ecosystem perspective, the Great South Channel, below, is the natural barrier that separates Georges Bank from Southern New England and the Mid Atlantic Cold Pool. This creates a

[1] Link et al., "Status of the Northeast U.S. Continental Shelf Ecosystem: A Report of the Notheast Fisheries Svience Center's Ecosystem Status Working Group", NEFSC Reference Document 02-11, August 2002.

[2] See https://s3.us-east-1.amazonaws.com/nefmc.org/Georges-Bank-Ecosystem-Production-Unit_01.19.21.pdf.

distinct ecosystem delineation that has remained consistent over time. The below chart is from the Northeast Fishery Science Center's 2021 State of the Ecosystem Mid Atlantic report:

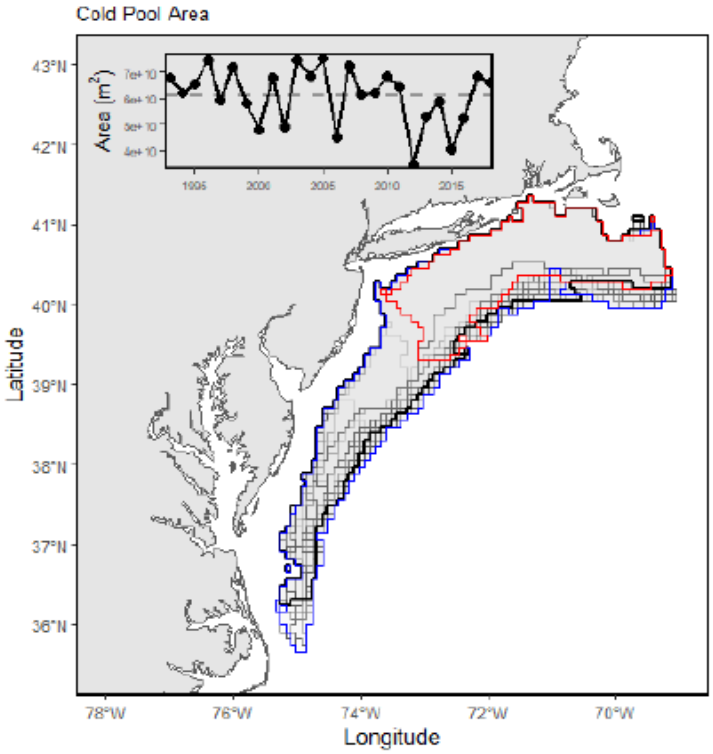
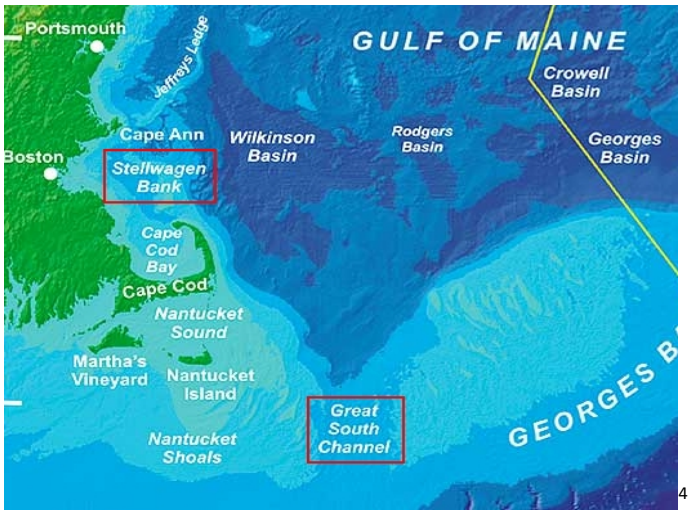


Figure 34: Map of cold pool area. Time series of cold pool spatial extent from1993-2018. Black = 2018 (Last year in time series), Red = 2012 Minimum area, Blue = 2005 Maximum area.[3]

See below for a chart of the Great South Channel which forms this natural barrier:



[4]

[3] See State of the Ecosystem 2021: Mid-Atlantic Revised (noaa.gov).

[4] See https://www.google.com/url?sa=i&url=https%3A%2F%2Fearthsky.org%2Fearth%2Fthe-foraging-acrobatics-of-humpback-whales%2F&psig=AOvVaw0SKrQx6tvrSnMYBlor2-M-&ust=1668614397636000&source=images&cd=vfe&ved=0CA8QjRxqFwoTCNjOp5fHsPsCFQAAAAAdAAAAABAD.

Based on the discussions about management implications in particular, we have concerns that including vital areas to Southern New England fisheries, including those south of Nantucket, in a Georges Bank Ecosystem FMP potentially in the future would have significant negative impacts on Southern New England vessels and existing fisheries. Therefore, we request that the natural barrier of the Great South Channel as a point of delineation between Southern New England and George's Bank be implemented into the discussion at this stage.

Additionally, we have serious concerns about the potential future management implications of this approach. This approach initially began development many years ago as a potential way to avoid choke stocks for New England groundfish vessels while allowing for opportunity to target higher biomass groundfish stocks. If the exercise and potential future management associated with it were to apply solely to the groundfish complex, we would have no concerns.

However, it has been made very clear at recent EBFM Public Information Workshops that the intent would be to include stocks managed and permitted by entities other than the New England Fishery Management Council within a Georges Bank Ecosystem FMP, including those managed by the Mid Atlantic Fishery Management Council. Southern New England vessels, including Seafreeze vessels and vessels that unload at our facilities, primarily harvest species managed by the Mid Atlantic Fishery Management Council, particularly since the implementation of the New England groundfish sector system.

Species such as longfin squid, illex squid, butterfish, mackerel, fluke, scup, and black sea bass are all species for which our vessels and vessels that unload at our facilities have invested in permits, business models, gear and equipment. These investments are not insignificant. According to presentations and explanations of how EBFM would work, given at the EBFM Public Information Workshops, the New England Fishery Management Council would assume management authority for the percentage of Mid Atlantic managed species occurring in its Georges Bank Ecological Production Unit under an Ecosystem FMP. This would purportedly occur after consultation with the Mid Atlantic Fishery Management Council to ensure alignment with the Mid Atlantic Council's management goals for those stocks. Fisheries access to the Georges Bank Ecosystem FMP complex would then be granted via a form of Georges Bank Ecosystem permit.

We do not support this approach. While the science of an ecosystem model is a scientifically interesting concept, the management implications are tremendous, with our vessels and other Southern New England vessels destined to be the collateral damage. Should a percentage of a particular species that we harvest and rely on be determined to exist in a Georges Bank Ecosystem FMP, and that percentage taken off the top of either a federal coastwide quota currently able to be accessed only by species-specific federal permit holders, or off of a state allocated quota currently able to be accessed only by species- and state- specific permit holders, in order to now be allocated to the Georges Bank Ecosystem FMP holders, we will immediately lose quota and access to an entirely new group of entities which have not invested in these permits or fisheries.

Entire fisheries federally managed by the Mid Atlantic Council, or state fisheries managed by the Mid Atlantic Council/Atlantic States Marine Fisheries Commission/individual states will experience direct loss of quota which would be absorbed into a Georges Bank Ecosystem FMP. Those eligible for a Georges Bank Ecosystem FMP permit who do not currently have access to these fisheries are most likely to consist of vessels engaged in the groundfish fishery who have not invested in the related permits. As

fisheries such as the squid fisheries are lucrative fisheries, effort in these fisheries would most likely increase, leading to earlier closures and other management implications. Including Nantucket Shoals and Southern New England, which encompasses the longfin squid and other fisheries occurring in that area, would only serve to exacerbate the impact.

We understand that the New England Fishery Management Council is initiating this as a scientific exercise. However, the scientific exercise cannot be disassociated from management, as science is the driver of management and the Council has been clear in its desire to develop management recommendations from this exercise. Discussing the management implications up front is necessary for a transparent process.

As the Council is soliciting feedback through the EBFM Public Information Workshops and other means, it is important that the Council understand these concerns. We request that jurisdictional and management issues be included and discussed transparently at the outset, including the involvement of other management bodies and stakeholders, should the continued exercise include species and fisheries other than groundfish and managed outside the New England Council process.

Thank you for the opportunity to comment.

Sincerely,

Meghan Lapp
Fisheries Liaison, Seafreeze Shoreside and Seafreeze Ltd.

CC: Eric Reid, Chairman, New England Fishery Management Council
John Pappalardo, Chairman, Ecosystem Based Fisheries Management Committee
Mike Pierdinock, Vice-Chair, Ecosystem Based Fisheries Management Committee

Seafreeze Ltd.

100 Davisville Pier
North Kingstown, R.I. 02852 U.S.A.
Tel: (401)295-2585

November 17, 2022

Laura Deighan
Fishery Management Specialist
NOAA Fisheries
978-281-9184, *laura.deighan@noaa.gov.*

RE: Comments on Monument Amendment; 87 FR 67677; NOTICE Nov. 9, 2022; Magnuson-Stevens Fishery Conservation and Management Act; Atlantic Coastal Fisheries Cooperative Management Act Provisions

We do not support amending the New England Fishery Management Council and Mid Atlantic Fishery Management Council FMPs to incorporate Northeast Canyons and Seamounts Marine National Monument fishing restrictions. This is not the appropriate mechanism for enforcement of Presidential Proclamation 10287, issued in October 2021. Fisheries prohibitions enacted by the Proclamation went into effect immediately and did not require any FMP amendments. According to NOAA Fisheries, "All commercial fishing, other than for American lobster and Atlantic deep-sea red crab taken with fixed gear, is prohibited within the Monument as of October 8, 2021."[1] The lobster and red crab fisheries will be prohibited starting September 15, 2023. There is no reason to change FMPs to incorporate a separate and standalone Presidential Proclamation created by Executive Order, outside of the Council process. Furthermore, neither the original September 2016 Proclamation creating the Monument, nor the June 2020 changes to the Monument prohibitions, required any FMP amendments.

According to NOAA Fisheries, amendments to the Council FMPs to incorporate the Monument's current commercial fishing prohibitions is being developed under section 305(d) of the Magnuson Stevens Fishery Conservation and Management Act, in supposed consultations with the New England and Mid Atlantic Fishery Management Councils.[2] There is nothing to consult. There has already been an immediate prohibition on commercial fishing inside the Monument, already in force via Executive Order, enacted and enforced by the agency via executive authority. The Councils cannot contribute any changes or effective input on any Monument regulations, as they have already been overruled by the executive process.

The circumstance is similar to that which occurred with the Northwestern Hawaiian Islands Marine National Monument, where commercial fishing for bottomfish and pelagic species was prohibited following a 5-year grace period, after which a complete prohibition ensued.[3] With the Northeast Monument, all commercial fishing was prohibited immediately, with lobster and red crab

[1] See https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/northeast-canyons-and-seamounts-marine-national.
[2] Ibid.
[3] See https://www.federalregister.gov/documents/2006/08/29/06-7235/northwestern-hawaiian-islands-marine-national-monument.

given a 7-year grace period after which a complete prohibition will ensue for those fisheries. Since a Council could not change or contribute to the fishing prohibitions promulgated by the Northwestern Hawaiian Islands Marine National Monument Proclamation, the Federal Register notice codifying the action stated, pursuant to the Administrative Procedure Act, that "Notice and comment are unnecessary and contrary to the public interest because these regulations do not expand on the action already taken by the President in the Proclamation."[4] It is the same in this case. Nothing that the Councils or the public can say will change the fact that commercial fishing has already been prohibited in the Monument via Executive Order. It is not public involvement; it is not Council involvement. Nothing regarding this Proclamation has involved the Council process.

Furthermore, Section 305(d) of the Magnuson Stevens Act, which NOAA is relying upon for justification to amend the Council FMPs to incorporate the Monument prohibitions, states, "The Secretary shall have general responsibility to carry out any fishery management plan or amendment approved or prepared by him, in accordance with the provisions of this Act. The Secretary may promulgate such regulations, in accordance with section 553 of title 5, United States Code, as may be necessary to discharge such responsibility or to carry out any other provision of this Act." The key phrase is "in accordance with the provisions of this Act". Since the Monument was not created by any provision of the Act and does not involve the Councils or the Council process in any way, and was rather created purely by Presidential Proclamation, there is no connection to the Magnuson Stevens Act whatsoever. In fact, the Act does not mention Marine Monuments at all.

The current Proclamation states, "management of lands and interests in lands owned or controlled by the Federal Government within the Northeast Canyons and Seamounts Marine National Monument shall be governed by the management provisions of Proclamation 9496. Such provisions include paragraph 6 in the section entitled "Prohibited Activities" and paragraph 5 in the section entitled "Regulated Activities," which provide for the prohibition of all commercial fishing in the monument, except for red crab and American lobster commercial fishing, which may be permitted until September 15, 2023" and directs the Secretaries of Interior and Commerce to develop a "joint management plan" and "as appropriate, shall promulgate implementing regulations". Previous management plans, such as the Northwestern Hawaiian Islands Marine National Monument plan, required, for example, Vessel Monitoring Systems (VMS) for all vessels transiting through the Monument area.[5] This does not require amendments to Council FMPs.

The current Proclamation does not direct the Secretary of Commerce to involve the Councils or to amend FMPs. It simply charges the Secretary to create and implement a management plan/regulations to prohibit commercial fishing in the Monument. This can be accomplished via the Administrative Procedure Act without amending Council FMPs. In contrast, during the codification of the Marianas Trench, Pacific Remote Islands, and Rose Atoll National Monuments, established in 2013, the Western Pacific Fishery Management Council did request to collaborate with the Secretary to amend multiple Fishery Ecosystem Plans due to the existence of Ecosystem Plans in those regions and allowance of continued traditional indigenous fishing in the Monuments.[6] No such Fishery Ecosystem

[4] See https://www.federalregister.gov/documents/2006/08/29/06-7235/northwestern-hawaiian-islands-marine-national-monument.
[5] See https://www.federalregister.gov/documents/2006/08/29/06-7235/northwestern-hawaiian-islands-marine-national-monument.
[6] See https://www.federalregister.gov/documents/2013/06/03/2013-13113/western-pacific-fisheries-fishing-in-the-marianas-trench-pacific-remote-islands-and-rose-atoll.

Plans nor indigenous fisheries occur in the Northeast Monument. There is merely a complete prohibition on commercial fishing, with a phase out of lobster and red crab. There is nothing to manage pursuant to any Council managed FMP.

In fact, contrary to the request by the Western Pacific Fishery Management Council to collaborate regarding FEPs and indigenous fisheries in the Marianas Trench, Pacific Remote Islands, and Rose Atoll National Monuments, the New England Fishery Management Council and the Mid Atlantic Fishery Management Council did not support the creation of the Northeast Canyons and Seamounts Monument. In a June 2017 letter to the Trump Administration, attached, the New England Fishery Management Council agreed with the Council Coordination Committee's similar letter, also attached, that "management of fisheries in marine monuments should remain under the jurisdiction of the Councils and NMFS, administered by the Magnuson Stevens Fishery Conservation and Management Act." The New England Council also demonstrated the Council's Magnuson Stevens Act-compliant Omnibus Deep Sea Coral Amendment, since enacted pursuant to that legislative process, that put fisheries restrictions in place in the Monument Area and beyond, is a scientifically sound action involving significant stakeholder engagement as well as technical information. This is in stark contrast to the Monument's blanket fishing prohibitions developed without scientific or technical information and devoid of stakeholder input in the form of a Presidential Proclamation.

As the Northeast Monument was not developed pursuant to any provisions of the Magnuson Stevens Act, and rather specifically overrode similar regulations that actually were developed pursuant to the Magnuson Stevens Act, the Magnuson Act cannot be used as justification to amend any Council FMP. NOAA's claimed intent to "consult" with the Councils is not a valid consultation; it is already clear that the input and stated will of the Councils has been overridden by the current Presidential Proclamation which removes their authority from managing fisheries inside the Monument. Therefore, appropriate implementation of the Monument management plan/regulations should be conducted under the Administrative Procedure Act. Invoking the Magnuson Stevens Act to amend Council FMPs is inappropriate, as the current Monument Proclamation was issued with specific intent to supersede the authority of the Magnuson Act and Council process via the Antiquities Act and Presidential Proclamation.

If NOAA Fisheries intends to invoke the Magnuson Stevens Act to justify an Omnibus Amendment amending all Council FMPs to incorporate Monument prohibitions, then the agency must abide by all Magnuson Act provisions, including the National Standards, and conduct NEPA analysis which the agency has said it does not intend to conduct. It will also need to incorporate the best scientific information available, which the blanket prohibition on commercial fishing per the Proclamation does not.

We do not support the use of Presidential Proclamation to override the Congressionally established fisheries management process. Fisheries management is a highly scientific, technical, and participatory process that is held to stringent legislative standards. Multiple NOAA Fisheries Science Centers exist throughout the country specifically to conduct science related to fisheries management. Each Regional Fishery Management Council meets for multiple weeks every year, with entire Committees, Advisory Councils, Monitoring Committees, Planning Development Teams/Fishery Management Action Teams, and staff dedicated to each individual managed species, along with entire Committees, Advisory Councils, staff, etc. dedicated to Ecosystems, Habitat, and other issues related to fisheries management. Council actions can take years of science, analysis, and public process to develop and implement, to ensure accordance with Magnuson Act standards. To override this deliberative and

legislatively established process by Presidential Proclamations which are devoid of science, devoid of analysis, and devoid of public process is poor management of our nation's resources. It is also devastating to the nation's fishermen and fishing communities that rely on them.

Additionally, the information presented during the November 16, 2022 Monument Virtual Hearing minimizes the importance of the butterfish fishery in the Monument area. Seafreeze vessels have operated in the Monument area for decades, engaging in the butterfish fishery and other fisheries. The years chosen by the agency to show the impacts on the butterfish fishery, 2005-2014, encompasses years when the butterfish fishery was reduced to a bycatch fishery only due to management regulations. These years do not best represent the importance of that area to this fishery.

Thank you for the opportunity to comment.

Sincerely,
Meghan Lapp
Fisheries Liaison
Seafreeze Shoreside and Seafreeze Ltd.

New England Fishery Management Council Meeting Agenda
Monday – Thursday, December 5-8, 2022
Hotel Viking, One Bellevue Avenue, Newport, RI 02840
tel: (401) 847-3300 | Hotel Viking
Webinar Registration Option

Sending comments? Written comments must be received at the New England Fishery Management Council (NEFMC) office no later than 8:00 a.m., Thursday, December 1, 2022 to be considered at this meeting. Please address comments to Council Chair Eric Reid or Executive Director Tom Nies at: NEFMC, 50 Water Street, Mill 2, Newburyport, MA 01950. Email submissions should be sent to comments@nefmc.org. ** Written comments must address items listed on the agenda for this meeting or issues that will be brought up under the open period for public comment.

IMPORTANT: *The Council will hold its December 2022 meeting at the Hotel Viking in Newport, RI. A webinar option will be available for individuals who cannot or prefer not to attend in person. The Council continues to follow all public safety measures related to **COVID-19** and intends to do so for this meeting. Please participate remotely if you are experiencing COVID symptoms or do not feel well. Updates will be posted on the **Council's December 2022 meeting webpage**.*

PUBLIC COMMENTS: *The Council's "Guidelines for Providing Public Comments" can be found **here**. Anyone interested in speaking during the open period for public comment on Tuesday, December 6, 2022 at 1:45 p.m. should fill out the sign-up sheet on the table at the entrance to the Council meeting room. To speak remotely, email Janice Plante at jplante@nefmc.org to get on the list.*

Monday, December 5, 2022

1:00 p.m. **Introductions and Announcements** (Council Chair Eric Reid)

1:05 **Reports on Recent Activities**
Council Chair, Council Executive Director, Greater Atlantic Regional Fisheries Office (GARFO) Regional Administrator, National Oceanic and Atmospheric Administration (NOAA) General Counsel, Northeast Fisheries Science Center (NEFSC), Mid-Atlantic Fishery Management Council (MAFMC), Atlantic States Marine Fisheries Commission (ASMFC), U.S. Coast Guard, NOAA Enforcement, Northeast Trawl Advisory Panel (NTAP)

2:45 **NOAA Guidance to Councils on Financial Disclosures and Voting Recusals** (Mitch MacDonald, NOAA GC)
NOAA General Counsel briefing on disclosure of financial interests and voting recusal regulations for Regional Fishery Management Council members

3:30 **Introduction to Chief of BOEM's Office of Renewable Energy Programs** (Karen Baker, BOEM)
Update on Bureau of Ocean Energy Management (BOEM) activities and community engagement from the Chief of the agency's Office of Renewable Energy Programs

4:00 **Habitat Committee Report** (Council Chair Eric Reid)
Aquaculture: update on framework adjustment to facilitate offshore Atlantic salmon aquaculture; Dedicated Habitat Research Areas (DHRAs): discuss retention of Georges Bank DHRA; Offshore Energy and Habitat-Related Work: update

5:00 **Preventing Harassment in the Fishery Management Council Process** (Council Chair Eric Reid)
Discussion on policies for preventing harassment of Council staff and all other Council process participants

Tuesday, December 6, 2022

9:00 a.m. **Monkfish Management Track Stock Assessment Peer Review** (Dr. Jon Deroba, NEFSC)
Presentation on peer review results for September 2022 Monkfish Management Track Stock Assessment

9:30 **September 2022 Groundfish Management Track Stock Assessments** (Dr. Russ Brown, NEFSC)

Presentation on peer-reviewed September 2022 Management Track Stock Assessments for numerous groundfish stocks

11:00 **Scientific and Statistical Committee (SSC) Report** (SSC Chair Dr. Lisa Kerr)
Receive SSC recommendations for overfishing limits (OFLs) and acceptable biological catches (ABCs) for: (1) monkfish for fishing years 2023-2025; (2) Atlantic sea scallops for fishing year 2023 and defaults for fishing year 2024; and (3) Georges Bank cod and Georges Bank yellowtail flounder for fishing years 2023-2024, as well as 14 other groundfish stocks for fishing years 2023-2025

12:30 p.m. **Lunch Break**

1:45 **Open Period for Public Comment**
Opportunity for the public to provide brief comments on issues relevant to Council business but not listed on this agenda (please limit remarks to 3-5 minutes)

2:00 **Groundfish Committee Report** (Rick Bellavance)
Framework Adjustment 65: final action to include (1) 2023-2024 total allowable catches (TACs) for U.S./Canada shared resources on Georges Bank; (2) 2023-2024 specifications for Georges Bank cod and Georges Bank yellowtail flounder; (3) 2023-2025 specifications for 14 additional groundfish stocks; (4) revised rebuilding plan for Gulf of Maine cod; (5) additional measures to promote Georges Bank and Gulf of Maine cod stock rebuilding; and (6) acceptable biological catch (ABC) control rule revisions for groundfish

Wednesday, December 7, 2022

9:00 a.m. **Atlantic Sturgeon** (Executive Director Tom Nies; Spencer Talmage, GARFO)
GARFO presentation on final action plan for Atlantic sturgeon; Council discussion on next steps to reduce sturgeon bycatch in federal large-mesh gillnet fisheries

9:45 **Monkfish Committee Report** (Libby Etrie)
Framework Adjustment 13: final action on specifications for the 2023-2025 fishing years and other measures

11:00 **Scallop Committee Report** (Melanie Griffin)
Framework Adjustment 36: final action on specifications for the 2023 fishing year, default specifications for 2024, and other measures

12:30 p.m. **Lunch Break**

1:45 **Climate Change Scenario Planning** (Staff; Jonathan Star, Scenario Insight)
Facilitated discussion to identify main takeaways and potential actions across four thematic areas – management and governance, data and science, alternative ocean uses, and adaptability – developed through the East Coast Climate Change Scenario Planning initiative; recommend and prioritize actions for evaluation at a February 2023 Summit to assist East Coast fishery management organizations in adapting to climate change

Thursday, December 8, 2022

9:00 a.m. **Ecosystem-Based Fishery Management (EBFM) Committee** (John Pappalardo; Tom Balf, Oceanvest; Dr. Gavin Fay, UMass-Dartmouth)
EBFM Public Information Workshops: preliminary summary of seven in-person workshops conducted in October and November; Prototype Management Strategy Evaluation (MSE): overview of Prototype MSE scoping meetings for EBFM and the Georges Bank example Fishery Ecosystem Plan (eFEP); Council Member Ongoing Development (CMOD): report on November 2022 CMOD meeting

10:30 **Spiny Dogfish Committee** (Melanie Griffin; Jason Didden, MAFMC)
Approve specifications for the 2023 spiny dogfish fishing year

11:30 **Whiting Report** (Staff)

Presentation on 2022 Small-Mesh Multispecies (Whiting) Annual Monitoring Report covering the 2021 fishing year

12:00 p.m. **National Saltwater Recreational Fisheries Policy** (Executive Director Tom Nies)
Approve Council comment letter on NOAA's updated Saltwater Recreational Fisheries Policy

12:15 **Lunch Break**

1:15 **2023 Council Priorities** (Executive Director Tom Nies)
Final action on 2023 Council Priorities for all fishery management plans and other Council responsibilities

4:00 **Other Business**

Times listed next to the agenda items are estimates and are subject to change.
This meeting is being held in person and by webinar. Council member financial disclosure forms are available for examination on the Council website.

Although other non-emergency issues not contained on this agenda may come before this Council for discussion, those issues may not be the subject of formal action during this meeting. Council action will be restricted to those issues specifically listed in this notice and any issues arising after publication of this notice that require emergency action under section 305 (c) of the Magnuson-Stevens Act, provided the public has been notified of the Council's intent to take final action to address the emergency.

Documents pertaining to Council actions are available for review prior to a final vote by the Council.
Please check the Council's website, www.nefmc.org, or call (978) 465-0492 for copies.
This meeting will be recorded. Consistent with 16 USC 1852, a copy of the recording is available upon request.

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

4055 Faber Place Drive, Suite 201, North Charleston SC 29405
Call: (843) 571-4366 | Toll-Free: (866) SAFMC-10 | Fax: (843) 769-4520 | Connect: www.safmc.net

Carolyn N. Belcher, Ph.D., Chair |Trish Murphey, Vice Chair
John Carmichael, Executive Director

Agenda

Blockade Runner
275 Waynick Boulevard
Wrightsville Beach, NC 28480

December 5-9, 2022

Except for advertised (scheduled) public hearings and public comment sessions, the times indicated on the agenda may be adjusted as necessary to accommodate the completion of agenda items. Interested parties should be aware that meetings may start earlier or later than indicated.

Hybrid Public Comment Session:
The public comment session for the meeting (December 7, 2022, at 4 PM), will allow for both in-person and remote (via webinar) verbal public comment. Individuals intending to provide verbal public comment remotely are asked to sign-up at the following link: https://safmc.wufoo.com/forms/qtk3tod0hfltvz/. Members of the public intending to provide verbal public comment in-person will be asked to sign-in at the meeting.

Written Comments:
To submit written comment on items on this agenda, visit the online public comment form:
https://safmc.wufoo.com/forms/qowa39c1k7p6rl/.
Written comments will be accepted from November 18 to December 9, 2022. These comments are accessible to the public, part of the Administrative Record of the meeting, and immediately available for Council consideration.
View submitted written comments at: https://safmc.wufoo.com/reports/2022-december-council-meeting-comment-report/.
Written comments submitted by mail/fax received by close of business the Monday before the meeting (November 28, 2022) will be compiled, posted to the website as part of the meeting materials, and included in the administrative record.
From November 29 to 5 PM on December 9, written comments must be submitted electronically through the online public comment form at the link above.

Monday, December 5, 2022 COUNCIL SESSION I

COUNCIL SESSION I/Belcher 8:30 am – 10:30 am (CLOSED Session)

- Adopt agenda

1. Advisory Panel (AP) selection
    a. Appoint members for open seats
    b. AP policy review
    c. Stakeholder group meetings

COUNCIL SESSION I/Belcher 10:30 am – 12:00 Noon

- Call to order and introductions
- Adopt agenda
- Approve transcript (September 2022)

1. Reports (NOAA Office of Law Enforcement, US Coast Guard, Council liaisons, state agencies)
2. Joint Commercial Electronic Logbook Amendment
3. Proposed Hudson Canyon National Marine Sanctuary Presentation – LeAnn Hogan, Office of National Marine Sanctuaries
4. Florida Keys National Marine Sanctuary Proposed Rule Comments

12:00 noon to 1:30 pm **Lunch**

COUNCIL SESSION I /Belcher 1:30 pm – 5:00 pm

5. Acceptable Biological Catch Control Rule Amendment
    a. Consider for final approval
6. Climate Change Scenario Planning Workshop
    a. Key discussion topics and recommendations for the 2023 Summit Meeting

Tuesday, December 6, 2022 **COMMITTEE MEETINGS**

Snapper Grouper Committee/McCawley 8:30 am – 12:00 noon

- Status of amendments recently submitted

1. Release Mortality Reduction & Red Snapper (SG Regulatory Amendment 35)
    a. Snapper Grouper AP input – Bob Lorenz, AP Chair
    b. Scientific and Statistical Committee (SSC) input – Jeff Buckel, SSC Chair
    c. Consider approval for public hearings

12:00 noon to 1:30 pm **Lunch**

Snapper Grouper Committee/McCawley 1:30 pm – 4:30 pm

2. Snapper Grouper Management Strategy Evaluation (MSE) Update
    a. Snapper Grouper AP input
    b. SSC input
3. Recreational Permitting & Reporting (SG Amendment 46)
    a. Private Recreational Permit Advisory Panel report
    b. Section 102 Workgroup report
    c. Consider approval for scoping

Wednesday, December 7, 2022 COMMITTEE MEETINGS

Snapper Grouper Committee/McCawley 8:30 am – 12:00 noon

4. Gag and Black Grouper (SG Amendment 53)
    a. Snapper Grouper AP Recommendations
5. Snowy Grouper (SG Amendment 51)
    a. Consider for final approval

12:00 noon to 1:30 pm Lunch

Snapper Grouper Committee/McCawley 1:30 pm – 3:45 pm

6. Golden Tilefish and Blueline Tilefish (SG Amendment 52)
    a. Consider for final approval
7. AP recommendations for items not on the agenda

Wednesday, December 7, 2022 PUBLIC COMMENTS

4:00 pm

Public comment will be accepted from individuals attending the meeting (in-person and remotely) regarding any of the items on the Council agenda. The Council Chair, based on the number of individuals wishing to comment, will determine the amount of time provided to each commenter. Those intending to provide verbal public comment via webinar can sign-up here: https://safmc.wufoo.com/forms/qtk3tod0hfltvz/.

Approval for scoping:

1. Recreational Permitting & Reporting (SG Amendment 46)

Approval for public hearings:

2. Release Mortality Reduction & Red Snapper (SG Regulatory Amendment 35)

Final approval:

1. ABC Control Rule Amendment
2. Snowy Grouper (SG Amendment 51)
3. Golden Tilefish and Blueline Tilefish (SG Amendment 52)

Thursday, December 8, 2022 COUNCIL SESSION II (CLOSED)

COUNCIL SESSION II /Belcher 8:00 am – 9:00 am

1. Executive Director Review

Thursday, December 8, 2022 COMMITTEE MEETINGS

Mackerel Cobia Committee/Roller 9:00 am – 12:00 noon

1. Mackerel Cobia AP Report – Ira Laks, AP Chair
2. Gulf King Mackerel (CMP Amendment 33)
    a. Consider recent Gulf Council actions
3. Spanish Mackerel
    a. SSC Recommendations
    b. Allocation Decision Tool application
4. White Paper on False Albacore
5. Port Meetings discussion

12:00 noon to 1:30 pm Lunch

Outreach and Communication Committee/Woodward 1:30 pm – 2:30 pm

1. Outreach and Communications AP report – Scott Baker, AP Chair
2. Review Draft Best Fishing Practices Outreach Program (to inform Snapper Grouper Regulatory Amendment 35)

Thursday, December 8, 2022 COUNCIL SESSION

COUNCIL SESSION III/Belcher 2:30 pm – 5:00 pm

1. Litigation Brief (if needed)
2. Staff Report
3. Update on Council Member Ongoing Development (CMOD)
4. Habitat Protection & Ecosystem Advisory Panel Report – Cindy Cooksey, AP Chair
5. Atlantic Large Whale Take Reduction Team Update – Charlie Phillips
6. SSC Recommendations not addressed in Committees
7. NMFS Southeast Regional Office Report
    a. Protected Resources Update
    b. Update on SEFHIER program
8. NMFS Southeast Fisheries Science Center Report
    a. Dolphin MSE Stakeholder Meetings Update
    b. Update on South Atlantic Ecosystem Status Report and Climate Vulnerability Assessment

COUNCIL SESSION III/Belcher 8:30 am – 12:00 noon

9. Committee reports
10. Council workplan
11. Upcoming meetings

Other business

Adjourn