



August 2023 Council Meeting

Tuesday, August 8 – Friday, August 11, 2023

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

This meeting will be an in-person meeting with a virtual option. 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/august-2023>.

Tuesday, August 8th

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|--------------------------------|--|----------------|
| 10:00 a.m. | <i>Council Convenes with the Atlantic States Marine Fisheries Commission (ASMFC) Summer Flounder, Scup, and Black Sea Bass Management Board</i> | |
| 10:00 a.m. – 12:00 p.m. | Summer Flounder 2024-2025 Specifications <ul style="list-style-type: none">– Review recommendations from the Scientific and Statistical Committee (SSC), Monitoring Committee, Advisory Panel, and staff– Adopt specifications for 2024-2025– Review and revise 2024-2025 commercial measures if needed | (Tab 1) |
| 12:00 p.m. – 1:00 p.m. | ----- LUNCH ----- | |
| 1:00 p.m. – 2:30 p.m. | Scup 2024-2025 Specifications <ul style="list-style-type: none">– Review recommendations from the SSC, Monitoring Committee, Advisory Panel, and staff– Adopt specifications for 2024-2025– Review and revise 2024-2025 commercial measures if needed | (Tab 2) |
| 2:30 p.m. – 3:30 p.m. | Scup Commercial Discards Report <ul style="list-style-type: none">– Review commercial scup discards through 2022– Review Scup GRA analysis and discuss next steps | (Tab 3) |
| 3:30 p.m. – 5:00 p.m. | Black Sea Bass 2024 Specifications <ul style="list-style-type: none">– Review recommendations from the SSC, Monitoring Committee, Advisory Panel, and staff– Adopt specifications for 2024– Review and revise 2024 commercial measures if needed | (Tab 4) |
| 5:00 p.m. | <i>Council Adjourns</i> | |
| 5:00 p.m. – 5:30 p.m. | ASMFC Summer Flounder, Scup, and Black Sea Bass Board Only <ul style="list-style-type: none">– ASMFC Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan Review– Elect Board vice chair | |

Wednesday, August 9th

- 9:00 a.m.** **Council Convenes with the ASMFC Interstate Fishery Management Program (ISFMP) Policy Board**
- 9:00 a.m. – 10:30 a.m.** **Recreational Harvest Control Rule Framework / Addenda 2.0** (Tab 5)
– Review progress and discuss next steps
- 10:30 a.m.** **Council and ASMFC ISFMP Adjourns**
- 10:30 a.m.** **Council Convenes with the ASMFC Bluefish Management Board**
- 10:30 a.m. – 12:15 p.m.** **Bluefish 2024-2025 Specifications** (Tab 6)
– Review recommendations from the SSC, Monitoring Committee, Advisory Panel, and staff
– Adopt specifications for 2024-2025 including recreational management measures
- 12:15 p.m.** **Council Adjourns**
- 12:15 p.m. – 12:30 p.m.** **ASMFC Bluefish Board Only**
– ASMFC Bluefish Fishery Management Plan Review
– Elect Board vice chair
- 12:30 p.m. – 1:30 p.m.** ----- LUNCH -----
- 1:30 p.m.** **Council Convenes**
- 1:30 p.m. – 3:00 p.m.** **East Coast Scenario Planning Initiative** (Tab 7)
– Review outcomes and discuss MAFMC next steps
- 3:00 p.m. – 4:30 p.m.** **NOAA Fisheries Climate Governance Policy** (Tab 8)
– Review NOAA Fisheries draft policy and SSC comments
– Develop Council comments
- 4:30 p.m. – 5:00 p.m.** **Award Presentations**
– Presentation of Award of Excellence, Ricks E Savage Award, and acknowledgement of outgoing Council member

Thursday, August 10th

- 9:00 a.m. – 10:30 a.m. Atlantic Mackerel 2024-2025 Specifications (Tab 9)**
- Review results of 2023 Management Track Assessment and rebuilding progress
 - Review results of 2023 Canadian assessment/management actions
 - Review recommendations from the SSC, Monitoring Committee, Advisory Panel, and staff
 - Adopt specifications for 2024-2025
 - Consider emergency action request and/or Framework initiation if appropriate given assessment results
- 10:30 a.m. – 11:30 a.m. River Herring and Shad (RH/S) (Tab 10)**
- Review RH/S update
 - Review recommendations from the RH/S Committee, RH/S Advisory Panel, Mackerel, Squid, and Butterfish Monitoring Committee, and staff
 - Adopt RH/S cap (Atlantic mackerel fishery) for 2024-2025
- 11:30 a.m. – 12:00 p.m. National Fish and Wildlife Foundation Electronic Monitoring and Reporting Grant Program – Gray Redding, NFWF (Tab 11)**
- Update on the NFWF electronic monitoring and reporting grant program
- 12:00 p.m. – 1:00 p.m. ----- LUNCH -----**
- 1:00 p.m. – 2:00 p.m. Longfin Squid 2024-2026 Specifications (Tab 12)**
- Review results of 2023 Management Track Assessment
 - Review recommendations from the SSC, Monitoring Committee, Advisory Panel, and staff
 - Adopt specifications for 2024-2026
- 2:00 p.m. – 3:00 p.m. //lex Hold Baseline FW Meeting #1 (Tab 13)**
- Review recommendations from the Mackerel, Squid, and Butterfish Committee, Advisory Panel, and staff
 - Review and approve range of alternatives
- 3:00 p.m. – 3:30 p.m. Research Set-Aside Program Redevelopment (Tab 14)**
- Update on the redevelopment of the Research Set-Aside program
- 3:30 p.m. – 4:30 p.m. Advanced Notice of Proposed Rulemaking (ANPR): National Standard 4, 8, and 9 Comments (Tab 15)**
- Review comments developed for NOAA Fisheries related to National Standard 4, 8, and 9

Friday, August 11th

9:00 a.m. – 9:30 a.m. Swearing in of New Council Members and Election of Officers

9:30 a.m. – 1:00 p.m. Business Session

Committee Reports: (Tab 16)

- Scientific and Statistical Committee
- Ecosystem and Ocean Planning Committee
- Highly Migratory Species Committee

Executive Director’s Report – Dr. Chris Moore (Tab 17)

Organization Reports:

- NOAA Fisheries Greater Atlantic Regional Fisheries Office, NOAA Fisheries Northeast Fisheries Science Center, NOAA Office of General Counsel, NOAA Office of Law Enforcement, US Coast Guard

Liaison Reports: (Tab 18)

- 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.

Stock Status of MAFMC-Managed Species

(as of 7/26/23)

SPECIES	STATUS DETERMINATION CRITERIA		Stock Status	Most Recent Assessment
	Overfishing $F_{\text{threshold}}$	Overfished $\frac{1}{2} B_{\text{MSY}}$		
 Summer Flounder	$F_{35\%MSP}=0.451$	54.63 million lbs	Overfishing Not overfished	Most recent management track assessment was 2023.
 Scup	$F_{40\%MSP}=0.19$	86.64 million lbs	No overfishing Not overfished	Most recent management track assessment was 2023.
 Black Sea Bass	$F_{40\%MSP}=0.46$	15.92 million lbs	No overfishing Not overfished	Most recent management track assessment was 2021.
 Bluefish	$F_{35\%SPR}=0.239$	97.15 million lbs	No overfishing Not overfished*	Most recent management track assessment was 2023. *Note: The stock is no longer overfished but has not rebuilt to target reference points and will remain under a rebuilding plan.
 Illex Squid (short finned)	Unknown	Unknown	Unknown Unknown	2022 research track assessment failed, but peer review agreed likely "lightly fished in 2019," though with cautions.
 Longfin Squid	Unknown	46.7 million lbs	Unknown Not overfished	Most recent management track assessment was 2023; not able to determine current exploitation rates.
 Atlantic Mackerel	$F_{40\%}=0.21$	169.9 million pounds	No overfishing* Overfished	Most recent management track assessment was 2023. *Note: Pending additional peer review in September.
 Butterfish	$F_{\text{Proxy}}=2/3M=0.81$	43.5 million lbs	No overfishing Not overfished	Most recent management track assessment was 2022.

SPECIES	STATUS DETERMINATION CRITERIA		Stock Status	Most Recent Assessment
	Overfishing $F_{\text{threshold}}$	Overfished $\frac{1}{2} B_{\text{MSY}}$		
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.
Surfclam 	$F/F_{\text{threshold}} = 1^a$	$SSB/SSB_{\text{threshold}} = 1^b$	No overfishing Not overfished	Most recent management track assessment was 2020.
Ocean Quahog 	$F/F_{\text{threshold}} = 1^c$	$SSB/SSB_{\text{threshold}} = 1^d$	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) 	$F_{\text{MSY}} = 0.2439$	175.6 million lbs Female SSB	No overfishing Not overfished	Most recent assessment was 2018. Stock status will be updated with 2023 management track assessment. 2022 research track assessment indicated declining biomass.
Monkfish (Joint mgmt with NEFMC) 	Unknown	Unknown	Unknown Unknown	Survey biomass trends evaluated in 2022 Management Track Assessment.

SOURCES: Office of Sustainable Fisheries - Status Report of U.S. Fisheries; SAW/SARC, SEDAR, TRAC Assessment Reports, NEFSC Research and Management Track Stock Assessments.

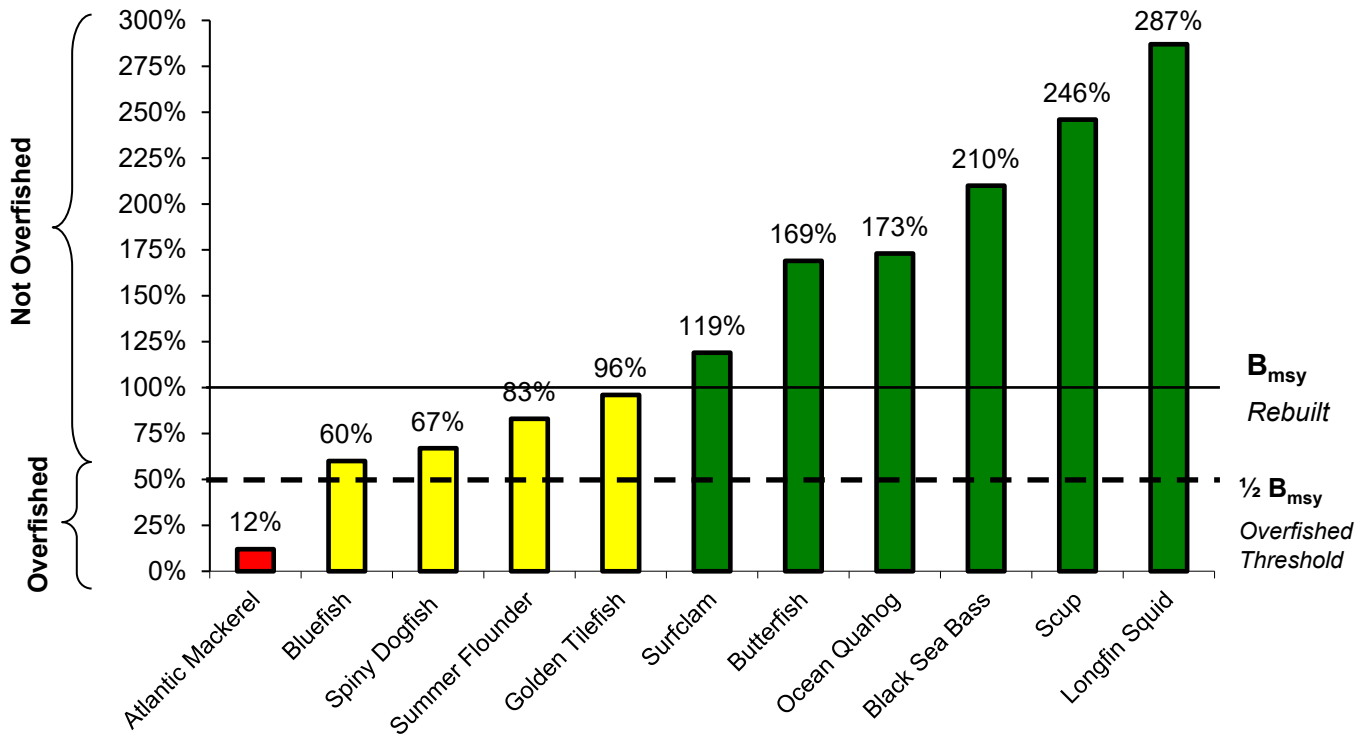
^a $F_{\text{threshold}}$ is calculated as 4.136 times the mean F during 1982 – 2015.

^b $SSB_{\text{threshold}}$ is calculated as $SSB_0/4$.

^c $F_{\text{threshold}}$ is 0.019.

^d $SSB_{\text{threshold}}$ is calculated as $0.4 * SSB_0$.

Stock Size Relative to Biological Reference Points (as of 7/26/23)



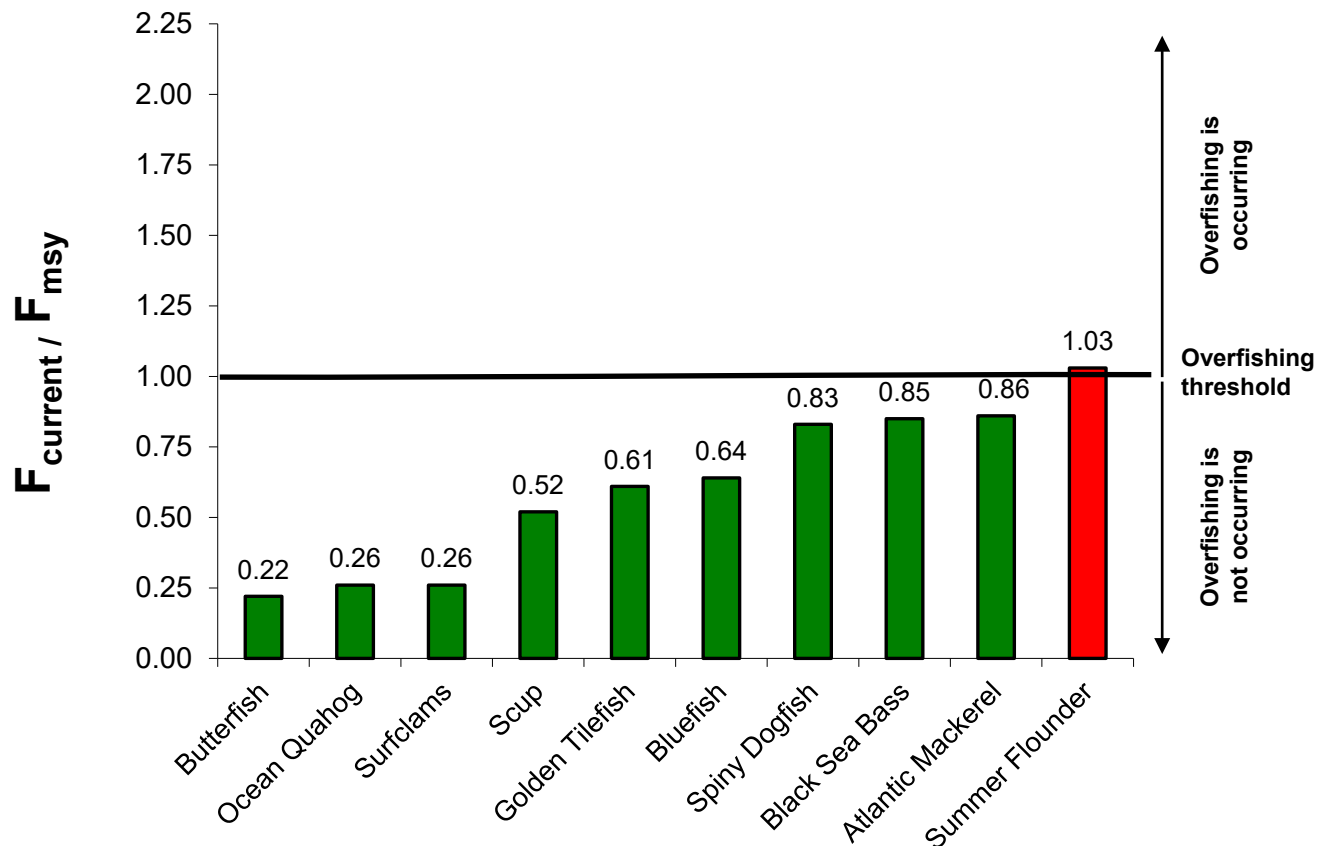
Notes:

- 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, 6 are above B_{MSY} , 5 are below B_{MSY} , and 4 are unknown.

Year of data used to determine stock size	
Atlantic Mackerel	2022
Black Sea Bass	2019
Bluefish	2022
Butterfish	2021
Golden Tilefish	2020
Longfin Squid	2021-2022 (average)
Ocean Quahog	2019
Spiny Dogfish	2018
Surfclam	2019
Scup	2022
Summer Flounder	2022

Fishing Mortality Ratios for MAFMC-Managed Species

(as of 7/26/23)



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 below F_{msy} , 1 is above F_{msy} , and 5 are unknown.

Year of data used to determine fishing mortality	
Atlantic Mackerel	2022
Black Sea Bass	2019
Bluefish	2022
Butterfish	2021
Golden Tilefish	2020
Ocean Quahog	2019
Spiny Dogfish	2017
Surfclam	2019
Scup	2022
Summer Flounder	2022



Status of Council Actions Under Development

AS OF 7/26/23

FMP	Action	Description	Status	Staff Lead
Summer Flounder, Scup, Black Sea Bass and Bluefish	Recreational Harvest Control Rule 2.0 Framework/Addenda	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. This action will consider a new process to be implemented in time for use in setting 2026 recreational measures. https://www.mafmc.org/actions/hcr-framework-addenda	An FMAT/PDT has been formed. The Council and ASMFC's Policy Board will receive an update and discuss next steps at the August 2023 meeting.	Beaty
	Recreational Sector Separation and Catch Accounting Amendment	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. https://www.mafmc.org/actions/recreational-reform-initiative	An FMAT is being formed to begin development of issues for consideration and a draft scoping document. The Council and ASMFC's Policy Board are tentatively scheduled to review a draft scoping document in Spring 2024.	Dancy/Hart
Mackerel, Squid, Butterfish	<i>Illex</i> Vessel Hold Capacity Framework	This framework will consider measures to restrict future increases in capacity in the <i>Illex</i> squid fishery. Specifically, this framework will consider implementing a volumetric vessel hold baseline requirement and an upgrade restriction for all <i>Illex</i> limited access permits. https://www.mafmc.org/actions/illex-vessel-hold-capacity-framework	The Council initiated this framework at the April 2023 Council Meeting. June Committee and Advisory Panel meeting will develop alternatives. FW Mtg 1 planned for Aug and final action at FW Mtg 2 in October.	Didden

FMP	Action	Description	Status	Staff Lead
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	In December 2022 the Council reviewed public comments and agreed to postpone final action to allow time for development of additional alternatives. The FMAT is continuing to work on alternative development in 2023.	Coakley/ Montañez
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. https://www.mafmc.org/actions/omnibus-efh-amendment	An FMAT was formed in January 2023. The FMAT will begin the EFH Review and development work for EFH and HAPC designations alternatives. The EOP Committee and Advisory Panel will meet to review technical approaches being considered in early fall 2023.	Coakley
Dogfish and Monkfish	Framework to Reduce the Bycatch of Atlantic Sturgeon	This action was initiated due to the 2021 Biological Opinion (BiOp) that considered the effects of ten FMPs on ESA listed species. The BiOp requires that sturgeon bycatch be reduced in federal large mesh gillnet fisheries, however it does not prescribe specific measures or a target percentage of bycatch reduction. https://www.mafmc.org/actions/sturgeon-bycatch-framework	Initiated in December 2022. NEFMC and MAFMC staff are co-leading the FMAT/PDT. The Councils are continuing to develop this action, and the MAFMC will approve a range of alternatives at their October Meeting.	Cisneros

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

As of 7/26/23

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
Black Sea Bass Commercial State Allocation Amendment	SFSBSB Amd 23	8/4/21	11/19/21	9/14/22	5/4/23	5/15/23				EA updated July 2023 only for ESA section due to change in sturgeon info.

Timeline and Status of Current and Upcoming Specifications for MAFMC Fisheries

As of 7/26/23

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	
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	2/17/23	3/7/23	7/27/23	7/27/23	SIR updated June 2023 only for ESA section due to change in sturgeon info.
Illex Squid	2023	8/10/22	11/10/22	2/15/23	3/7/23	7/27/23	7/27/23	
Atlantic Mackerel (including RH/S cap)	2023	6/8/22	8/19/22	10/27/22	11/2/22	2/2/23	2/1/23	
Chub mackerel	2023-2025	6/8/22	9/8/22	2/17/23	3/7/23	7/27/23	7/27/23	SIR updated June 2023 only for ESA section due to change in sturgeon info.
Bluefish	2023	8/8/22	9/22/22	10/26/22	11/15/22	12/21/22	1/1/23	
Summer Flounder, Scup, Black Sea Bass	2023	8/9/22	9/28/22	10/26/22	12/6/22	1/3/23	1/1/23	
Spiny Dogfish	2023	10/5/22	1/13/23	3/7/23	3/9/23	5/3/23	5/1/23	

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	2023	12/13/22	2/21/23	2/21/23	3/30/23			
Black sea bass rec measures	2023	12/13/22	2/21/23	2/21/23	3/30/23			
Scup rec measures	2023	12/13/22	2/21/23	2/21/23	3/30/23			
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 previous year's measures.
Blueline tilefish rec measures	2024 and beyond	6/6/23						



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: July 27, 2023
To: Council and Board
From: Kiley Dancy, Staff
Subject: Summer Flounder 2024-2025 Specifications

On Tuesday, August 8, the Council and Board will consider summer flounder specifications for 2024-2025 after reviewing the recommendations of the SSC, Monitoring Committee, and Advisory Panel. Measures to be considered include 2024-2025 commercial and recreational catch and landings limits, as well as any changes to the commercial management measures desired for 2024. Materials listed below are provided for the Council and Board's consideration of this agenda item.

Please note that some documents are behind separate tabs.

- 1) Executive Summary of the July 2023 Scientific and Statistical Committee meeting (*behind Tab 16*)
- 2) Staff memo on 2024-2025 summer flounder specifications dated July 13, 2023
- 3) Staff memo on Summer Flounder Mesh Regulation Issues dated July 18, 2023
- 4) Summer Flounder Draft Management Track Assessment for 2023
- 5) June 2023 Advisory Panel Fishery Performance Report and associated additional AP comments received through July 6, 2023
- 6) 2023 Summer Flounder Fishery Information Document

To be posted separately once available:

- 1) Full report of the July 2023 Scientific and Statistical Committee meeting
- 2) Monitoring Committee meeting summary from July 27, 2023
- 3) Any additional public comments received after July 26, if applicable



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: July 13, 2023 (Revised for minor correction on July 25, 2023)

TO: Chris Moore, Executive Director

FROM: Kiley Dancy, Staff

SUBJECT: Summer Flounder Specifications for 2024-2025

Executive Summary

This memorandum includes information to assist the Mid-Atlantic Fishery Management Council's (Council's) Scientific and Statistical Committee (SSC) and Monitoring Committee in recommending 2024-2025 catch and landings limits and commercial management measures for summer flounder. Additional information on fishery performance and past management measures can be found in the 2023 Summer Flounder Fishery Information Document and the 2023 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by advisors.¹

In June 2023, the Northeast Fisheries Science Center (NEFSC) provided a management track assessment (MTA) for summer flounder, which updated the 2018 benchmark assessment model with data through 2022.² The 2023 MTA indicates that the summer flounder stock was not overfished, but that overfishing was occurring in 2022. Due to this overfishing, continued high projected fishing mortality for 2023, and associated projected stock biomass declines in 2023, the overfishing limits (OFLs) are projected to decline in 2024-2025 compared to current levels (a 34% decrease from 2023 to 2024).

The Magnuson-Stevens Act requires the Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for Acceptable Biological Catch limits (ABCs), preventing overfishing, and achieving maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC.

There are currently no catch and landings limits in place for summer flounder beyond the 2023 fishing year. The SSC should recommend ABCs for 2024-2025 for the Council and Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Board (Board) to consider at their joint August 2023 meeting. Two-year specifications are recommended to align with the current stock assessment schedule for summer flounder, under which the next update is expected in 2025 to inform 2026-2027 specifications.

¹ Available at: <https://www.mafmc.org/fishery-performance-reports>.

² Available at: <https://www.mafmc.org/council-events/2023/july-2023-ssc-meeting>.

ABC projections for 2024-2025 were provided by the NEFSC, assuming continued application of an OFL CV of 60%, sampling recruitment from the recent, below-average recruitment series, and assuming total fishery catch in 2023 will be equal to the 2023 ABC. Projections were provided for both varying ABCs from 2024-2025, as well as an averaging approach where the 2024-2025 ABCs are identical. The Council and Board have requested the ability to determine which approach is more appropriate from a policy standpoint; therefore, the SSC is requested to provide recommendations for both varying and averaged ABCs. Staff recommend that the Council and Board adopt the averaged ABC approach for 2024-2025 such that the catch and landings limits are held constant over the two years. Under the previously described assumptions, this would result in a 2024-2025 ABC equal to 19.32 million pounds (8,761 metric tons), which would represent a 42% decrease from the 2022-2023 ABC of 33.12 million pounds (15,023 metric tons; Table 1). This decrease is the result of the notable decrease in the OFLs as described above, along with the application of the Council's risk policy that increases the buffer between the OFL and the ABC as projected B/B_{MSY} declines.

The Monitoring Committee should review recent fishery performance and the SSC's recommendations for ABCs and make a recommendation to the Council and Board regarding 2024-2025 commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs), commercial quotas, and recreational harvest limits. Staff recommend developing these limits using similar methods and assumptions as applied in recent years, including no reduction from the ACLs to the ACTs to account for management uncertainty. The resulting staff recommended sector specific limits are summarized in Table 1.

The Monitoring Committee will also consider whether any revisions are needed to the commercial management measures (minimum fish size, minimum mesh size, and mesh exemption programs) for 2024. Recreational measures for 2024-2025 will be considered later in 2023. Staff recommend no changes to the commercial minimum size, minimum mesh size, or mesh exemption programs for 2024. As described below in the "Commercial Management Measures" section, staff and a contractor are working to evaluate two issues in more depth for consideration later in 2023: 1) the commercial minimum mesh size exemption programs for summer flounder, and 2) the summer flounder commercial minimum mesh size regulations for summer flounder (5.5" diamond or 6.0" square mesh). Any potential changes adopted as the result of these evaluations would likely be effective in 2025 or later.

Table 1: The current (2023) catch and landings limits for summer flounder as well as staff recommended limits for 2024-2025. The final 2024-2025 values may differ based on the recommendations of the SSC, Monitoring Committee, Council, and Board.

Measure	2023		Basis	2024-2025 Staff Rec.		Staff Recommendation Basis
	mil lb	mt		mil lb	mt	
OFL	34.98	15,865	Stock assessment projections	22.98 (2024) 24.97 (2025)	10,422 (2022) 11,325 (2023)	Stock assessment projections ^a
ABC	33.12	15,021	July 2021 SSC recommendation	19.32	8,761	ABC projections provided by the NEFSC; averaged 2024-2025 ^a
ABC dead discards	7.23	3,279	NEFSC projections; averaged 2022-2023	4.18	1,895	NEFSC projections; averaged 2024-2025
Com. ACL	18.21	8,262	55% of ABC (revised commercial allocation)	10.62	4,819	55% of ABC (revised commercial allocation)
Com. ACT	18.21	8,262	No deduction from ACL for management uncertainty	10.62	4,819	No deduction from ACL for management uncertainty
Expected com. dead discards	2.95	1,336	41% of ABC dead discards portion, based on 2017-2019 average % dead discards by sector	1.83	831	44% of ABC dead discards portion, based on 2020-2022 average % dead discards by sector
Com. quota	15.27	6,925	Comm. ACT, minus expected comm. dead discards	8.79	3,987	Comm. ACT, minus expected comm. dead discards
Rec. ACL	14.90	6,759	45% of ABC (revised recreational allocation)	8.69	3,942	45% of ABC (revised recreational allocation)
Rec. ACT	14.90	6,759	No deduction from ACL for management uncertainty	8.69	3,942	No deduction from ACL for management uncertainty
Expected rec. dead discards	4.28	1,942	59% of ABC dead discards portion, based on 2017-2019 average % dead discards by sector	2.35	1,064	56% of ABC dead discards portion, based on 2020-2022 average % dead discards by sector
RHL	10.62	4,817	Rec. ACT minus expected rec. dead discards	6.35	2,879	Rec. ACT minus expected rec. dead discards

^a Projections assume a continued application of an OFL CV = 60%, and that the catch in 2023 is equal to the 2023 ABC.

Stock Status and Biological Reference Points

In June 2023, the NEFSC provided the 2023 MTA for summer flounder using data through 2022, based on the model developed through the 66th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC) in 2018. The 2023 MTA³ revised the biological reference points for spawning stock biomass (SSB) and fishing mortality (F). As summarized in Table 2 of the MTA, the SSB target decreased from 104.5 million pounds (55,217 mt) to 90.38 million pounds (49,561 mt), while F threshold increased from 0.422 to 0.451. The new overfished threshold is $\frac{1}{2} SSB_{MSY \text{ proxy}} = \frac{1}{2} SSB_{35\%} = 54.63$ million pounds (24,781 mt; Figure 1). Assessment results indicate that the summer flounder stock was not overfished, but that that overfishing was occurring in 2022.

SSB has generally decreased since 2003 and was estimated to be 90.38 million lb (40,994 mt) in 2022, about 83% of the updated biomass target reference point $SSB_{MSY \text{ proxy}} = 109.26$ million lb (49,561 mt). The 2021 MTA had estimated that stock biomass was at 86% of the previous SSB target.

Fishing mortality on the fully selected age 4 fish ranged between 0.756 and 1.601 during 1982-1996, followed by a period of decreasing F to a low of 0.257 in 2007. Post-2007, F rates increased but have been relatively stable since 2011. F in 2022 was estimated at 0.464, 103% of the updated fishing mortality threshold reference point ($F_{MSY \text{ proxy}} = F_{35\%} = 0.451$; Figure 2). The 2021 MTA had estimated that F was at 81% of the previous overfishing threshold.

Average recruitment from 1982 to 2022 is 51 million fish at age 0. Recruitment of juvenile summer flounder has been below-average from 2011-2022, ranging from 27 to 43 million fish and averaging 36 million fish. The driving factors behind this period of below average recruitment have not been identified. While the 2018 year class was originally estimated to be above average (estimated in the previous assessment at 61 million fish), the 2023 MTA revised the recruitment estimate down to 43 million fish. Recruitment estimates for 2019-2022 range from 36 to 42 million fish at age 0, all below the time series average and near or slightly above the recent average.

The next management track assessment for summer flounder is expected in 2025 to inform 2026-2027 limits.

³ https://www.mafmc.org/s/e_Summer_flounder_MTA_2023_06_08.pdf

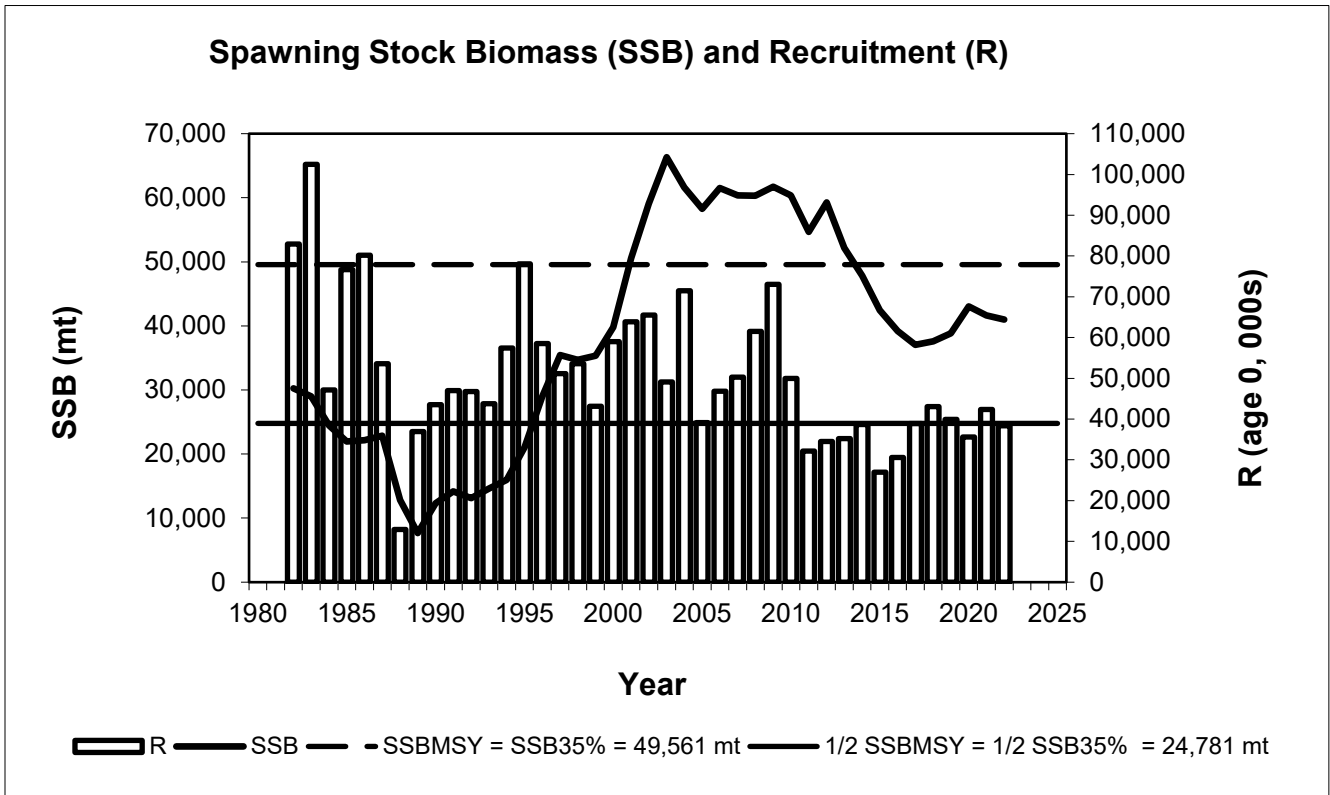


Figure 1: Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars), 1982-2022. The horizontal dashed line is the updated target biomass reference point. The horizontal solid line is the updated threshold biomass reference point. Source: 2023 management track assessment.

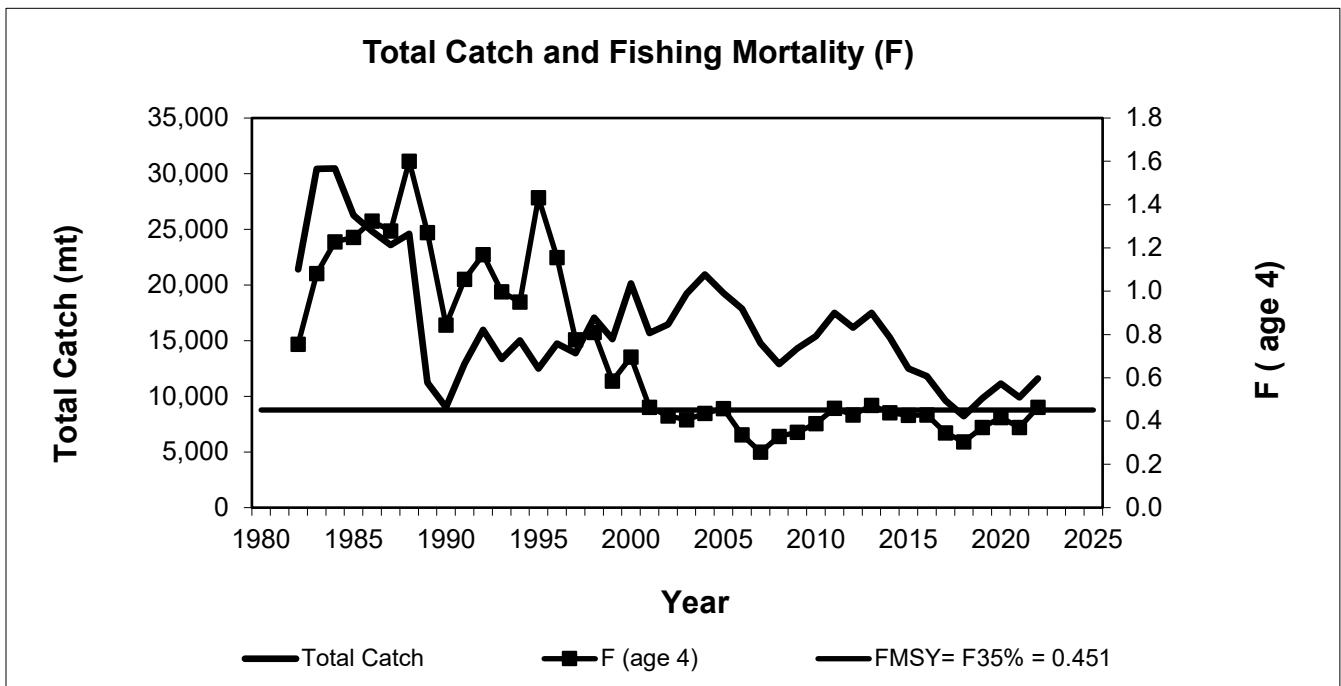


Figure 2: Total fishery catch (metric tons; mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder, 1982-2022. The horizontal solid line is the updated fishing mortality reference point. Source: 2023 management track assessment.

Recent Catch and Fishery Performance

Total Catch

Table 2 shows summer flounder total catch, overfishing limits (OFLs), and ABCs from 2019 through 2023. The ABC is set less than or equal to the OFL to account for scientific uncertainty. The OFL and the ABC for summer flounder have not been exceeded in recent years.⁴

Table 2: Total summer flounder dead catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC, 2019-2022. All values are in millions of pounds. Catch data from 2023 MTA.^a

Year	Total dead catch	OFL	OFL overage/underage	ABC	ABC overage/underage
2019	21.63	30.00	-28%	25.03	-14%
2020	24.60	30.94	-21%	25.03	-2%
2021	21.82	31.67	-31%	27.11	-20%
2022	25.61	36.28	-29%	33.12	-23%
2023	--	34.98	--	33.12	--

^a Numbers here may vary slightly from those in the 2023 Fishery Information Document due to the Catch Accounting and Monitoring System (CAMS) commercial fishery estimates now being used for 2020-2022 as reflected in the 2023 MTA.

Commercial Fishery

The commercial fishery has underharvested their quota since 2018, by 7% to 19% (Table 3). The larger underages since 2019 (17-19%) may be due in part to a substantial increase in quota starting in mid-2019, with possible additional influence from market factors related to COVID-19. Commercial landings in 2022 were approximately 12.53 million pounds (5,683 mt), about 81% of the commercial quota of 15.53 million pounds (7,046 mt).

Since 2019, in most years commercial dead discards have been below projected levels (with the exception of 2020). In all years since 2019, the commercial ACLs have not been exceeded. In 2022, commercial catch was 24% below the ACL (Table 3).

The 2023 commercial landings as of July 5, 2023, indicate that 45% of the 2023 coastwide commercial quota has been landed, slightly above last year's trajectory where 39% of the quota had been landed as of the same week in 2022.⁵

⁴ Despite the previously specified OFLs not being exceeded, as noted above, the new 2023 MTA now estimates that overfishing was occurring for summer flounder in 2022. This is partially driven by the latest model run adding three years (2020-2022) of fishery catch, survey catch, and biological data (including continued decreases in mean weights and maturities at age). While the average retrospective errors for SSB and F are small, adding multiple years of data contributed in this case to overestimating stock size and underestimating F. The previous OFLs were set using an assessment with terminal year 2019 and creating biomass projections for 2020-2023, which now appear to have been overoptimistic.

⁵ Based on data available at <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>

Table 3: Summer flounder commercial landings, dead discards, and dead catch compared to the commercial quota, projected commercial dead discards, and commercial ACL, 2014-2023. All values are in millions of pounds. Landings and discard data from 2023 management track assessment.^a

Year	Com. Land	Com. quota	Quota over/under	Com. dead disc ^a	Proj. com. dead disc	Proj. dead disc. Over/under	Com. dead catch	ACL	ACL over/under
2014	11.00	10.51	5%	1.83	2.03	-10%	12.83	12.87	0%
2015	10.71	11.07	-3%	1.55	2.27	-32%	12.26	13.34	-8%
2016	7.80	8.12	-4%	1.70	1.31	30%	9.50	9.43	1%
2017	5.83	5.66	3%	2.00	0.92	117%	7.83	6.57	19%
2018	6.14	6.63	-7%	2.16	1.07	102%	8.30	7.70	8%
2019	9.06	10.98	-17%	1.73	2.00	-14%	10.79	13.53	-20%
2020	9.44	11.53	-18%	2.56	2.00	28%	12.00	13.53	-11%
2021	10.88	12.49	-13%	1.92	2.14	-10%	12.80	14.63	-13%
2022	12.53	15.53	-19%	1.50	2.95	-49%	14.03	18.48	-24%
2023	--	15.27	--	--	2.95	--	--	18.21	--

^a Numbers here may vary slightly from those in the 2023 Fishery Information Document due to the Catch Accounting and Monitoring System (CAMS) commercial fishery estimates now being used for 2020-2022 as reflected in the 2023 MTA.

Recreational Fishery

Recreational fishery performance relative to RHLs through 2018 cannot be evaluated using the revised MRIP data, since past RHLs were set based on assessments that used the old data. A performance evaluation for 2014-2022 using old or new MRIP data, depending on the year, is provided in Table 4. Recreational performance has been more variable relative to the limits compared to the commercial fishery but was below its limits in both 2021 and 2022. Recreational harvest was estimated at approximately 8.63 million pounds (3,916 mt) in 2022, about 83% of the 2022 RHL of 10.36 million pounds. Recreational catch has generally been below the recreational ACL in most years since 2014, with the exception of 2014, 2016, and 2020 overages ranging from 4 to 12% (Table 4).

As of this memo, recreational harvest estimates for 2023 are only available through April, which does not provide meaningful information about 2023 recreational harvest trends for summer flounder given that in recent years wave 2 (March/April) has accounted for less than 1% of annual summer flounder harvest.

Table 4: Summer flounder recreational landings, dead discards, and dead catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Values are provided in the “old” and “new” MRIP units where available as the ACLs and RHLs did not account for the revised MRIP data until 2019. All values are in millions of pounds.

Year	Rec. land. OLD MRIP ^a	Rec. land. NEW MRIP ^b	RHL	RHL over/under	Rec. dead disc. old MRIP units ^a	Rec. dead disc. new MRIP units ^b	Proj. rec. dead disc.	Projected dead disc. over/under ^c	Rec. dead catch OLD MRIP ^a	Rec. dead catch NEW MRIP ^b	Rec ACL	Rec ACL over/under ^c
2014	7.39	16.23	7.01	5%	2.05	4.61	1.84	12%	9.44	20.84	9.07	4%
2015	4.72	11.83	7.38	-36%	1.24	3.47	2.06	-40%	5.96	15.30	9.44	-37%
2016	6.18	13.24	5.42	14%	1.48	3.27	1.41	5%	7.66	16.51	6.84	12%
2017	3.19	10.09	3.77	-15%	0.94	3.30	0.95	-1%	4.13	13.39	4.72	-13%
2018	3.35	7.60	4.42	-24%	0.97	2.21	1.11	-13%	4.32	9.81	5.53	-22%
2019	NA	7.80	7.69	1%	NA	3.04	3.82	-20%	NA	10.84	11.51	-6%
2020	NA	10.08	7.69	31%	NA	2.52	3.82	-34%	NA	12.60	11.51	9%
2021	NA	6.82	8.32	-18%	NA	2.20	4.16	-47%	NA	9.02	12.48	-28%
2022	NA	8.63	10.36	-17%	NA	2.95	4.28	-31%	NA	11.58	14.64	-21%
2023	NA	--	10.62	--	NA	--	4.28	--	NA	--	14.90	--

^a Based on the data update provided by the NEFSC in 2018 (most recent data from NEFSC in “old” MRIP units). Values for 2018 provided by GARFO.

^b Data from 2023 management track assessment.

^c Based on a comparison with old MRIP data through 2018 and new MRIP data starting in 2019.

Review of Prior SSC Recommendations

In July 2021, as requested by the Council, the SSC recommended two alternative sets of two-year ABC recommendations based on the information and projections from the 2021 management track assessment: one with varying ABCs each year, and one with a constant ABC across 2022-2023.

The SSC indicated that the approach to estimating uncertainty in the OFL had not changed since the previous benchmark (SAW/SARC 66 in 2018). Accordingly, the SSC maintained its determination that the assessment should be assigned an “SSC-modified OFL probability distribution.” In this type of assessment, the SSC provides its own estimate of uncertainty in the distribution of the OFL.

The SSC continued the application of a 60% OFL coefficient of variation (CV), because: (1) the latest management track assessment did not result in major changes to the quality of the data and model that the SSC has previously determined to meet the criteria for a 60% CV; (2) the summer flounder assessment continues to be a data rich assessment with many fishery independent surveys incorporated and with relatively good precision of the fishery dependent data; (3) several different models and model configurations were considered and evaluated by SAW-66, most of which showed similar stock trends and stock status; and (4) no major persistent retrospective patterns were identified in the most recent model. The SSC noted that significant improvements in quality of data and investigations of alternate model structures affirm the specification of the 60% OFL CV by the SSC.

The SSC accepted the OFL proxy ($F_{35\%} = 0.422$) used in the 2021 management track assessment. Given recent trends in recruitment for summer flounder, the SSC recommended the use of the most recent 9-year recruitment series for OFL projections (2011-2019) because near-term future conditions were more likely to reflect recent recruitment patterns than those in the entire 38-year time series.

The SSC considered the following to be the most significant sources of uncertainty associated with the determination of the OFL and/or ABC:

- Changes in life history are apparent in the population; for example, declining growth rates and differences in sex-specific age structure.
- Uncertainty regarding recreational catch and discard estimates from MRIP, especially for 2020 where some data were imputed.
- Potential changes in productivity of the stock, which may affect estimates of biological reference points. Changes in size-at-age, growth, and recruitment may be environmentally mediated, but mechanisms are unknown.
- Potential changes in availability of fish to some surveys and to the fishery as a result of changes in the distribution of the population.

Table 5 shows the SSC recommended 2022-2023 ABCs along with the associated OFLs and P* values. In August 2021, the Council and Board ultimately adopted the SSC-recommended ABCs based on the two-year averaged approach, implementing a constant ABC of 33.12 million pounds (15,021 mt) in each year 2022-2023.

In July 2022, the SSC reviewed the previously adopted ABC along with a data update for summer flounder, and recommended no changes to the previously recommended 2023 ABC adopted by the Council of 33.12 million pounds (15,021 mt).

Table 5: SSC-recommended 2022-2023 OFLs, ABCs, and P* values for the variable and averaged ABC approaches.

Variable ABCs			
Year	OFL	ABC	P*
2022	36.28 mil lb 16,458 mt	33.96 mil lb 15,403 mt	0.452
2023	34.74 mil lb 15,759 mt	32.27 mil lb 14,639 mt	0.447
Averaged ABCs^a			
Year	OFL	ABC	P*
2022	36.28 mil lb 16,458 mt	33.12 mil lb 15,021 mt	0.435
2023	34.98 mil lb 15,865 mt		0.461

^a Reflects currently approved ABCs adopted by Council and Board in August 2021.

2024-2025 ABCs

ABC projections for 2024-2025 were provided by the NEFSC, using several assumptions based on past recommendations of the SSC. The projections continue to sample from a shorter, more recent time series of recruitment since 2011, in this case, the 12-year time series of 2011-2022. As described above, recruitment was below average in these years. The causes of below-average recruitment have not been identified, and the SSC has previously adopted projections which use the shorter recruitment series believing that near-term future conditions are more likely to reflect recent recruitment patterns than those in the entire assessment time series (1981-2022).

Staff recommend continued use of the 60% OFL CV, which has been adopted by the SSC for summer flounder each year since 2014. There have been no major changes to the assessment that would impact the quality of the data and model that the SSC has previously determined to meet the criteria for a 60% CV. The summer flounder assessment continues to be a data rich assessment with many fishery independent surveys incorporated and with relatively good precision of the fishery dependent data. Several different models and model configurations were considered and evaluated by the most recent SAW, most of which showed similar stock trends and stock status. No major persistent retrospective patterns were identified in the most recent model.

Projections were provided for both annual (varying) 2024-2025 ABCs (Table 6) and averaged (constant) 2024-2025 ABCs (Table 7). Because the Council is unable to recommend ABCs higher than what the SSC recommends for any given year, the SSC is asked to provide ABC recommendations for both approaches to allow the Council and Board to select their preferred approach. The projections assume that catch in 2023 is equal to the 2023 ABC of 15,021 mt, and that catch in 2024 is equal to the relevant 2024 ABC specified within each table.

Table 6: Projections for annual 2024-2025 ABCs, including OFL and ABC total catch, ABC projected landings and discards, ABC projected F, and projected SSB. These projections sample from a recent time series of recruitment (2011-2022) and assume application of the current Council risk policy with a 60% OFL CV.

Year	OFL Total Catch		ABC Total Catch		ABC F	ABC P*	SSB		SSB/SSB _{MSY}
	mil lb	mt	mil lb	mt			mil lb	mt	
2023	34.98	15,867	33.12	15,023	0.622	0.461	82.08	37,233	75%
2024	22.98	10,422	17.88	8,111	0.338	0.326	89.15	40,439	82%
2025	25.39	11,515	20.75	9,411	0.358	0.358	93.59	42,452	86%

Table 7: Projections for averaged 2024-2025 ABCs, including OFL and ABC total catch, ABC projected landings and discards, ABC projected F, and projected SSB. These projections sample from a recent time series of recruitment (2011-2022) and assume application of the current Council risk policy with a 60% OFL CV.

Year	OFL Total Catch		ABC Total Catch		ABC F	ABC P*	SSB		SSB/SSB _{MSY}
	mil lb	mt	mil lb	mt			mil lb	mt	
2023	34.98	15,867	33.12	15,023	0.622	0.461	82.08	37,233	75%
2024	22.98	10,422	19.31	8,761	0.369	0.377	87.98	39,908	81%
2025	24.97	11,325	19.31	8,761	0.336	0.322	93.43	42,380	86%

Staff recommend that the Council and Board adopt ABCs for 2024-2025 based on the averaged ABC approach, resulting in a 2024-2025 ABC of 19.31 million pounds (8,761 mt; Table 7). This is consistent with the previous approach for summer flounder, and would provide stability and simplicity between limits in these two years.

The next management track assessment update is expected in 2025 to inform 2026-2027 catch and landings limits. A data update (updated fishery catch and federal trawl survey data only) would be requested next year. 2024-2025 ABCs adopted this year are not expected to be revised unless there are unusual signals in interim data updates that prompt the SSC to determine that changes may be warranted.

Sector-Specific Catch and Landings Limits

Recreational and Commercial Annual Catch Limits

The summer flounder commercial/recreational allocation was recently revised via Amendment 22 to the Fishery Management Plan (FMP), effective in 2023, such that 55% of the ABC is allocated to the commercial fishery as a commercial ACL, and 45% is allocated to the recreational fishery as a recreational ACL.⁶ Figure 3 illustrates the current flowchart for deriving commercial and recreational catch and landings limits from the OFL and ABC.

Under the staff recommended constant ABCs, these allocation percentages would result in a 2024-2025 commercial ACL of 10.62 million pounds (4,819 mt) and a recreational ACL of 8.69 million pounds in each year (3,942 mt; Table 1).

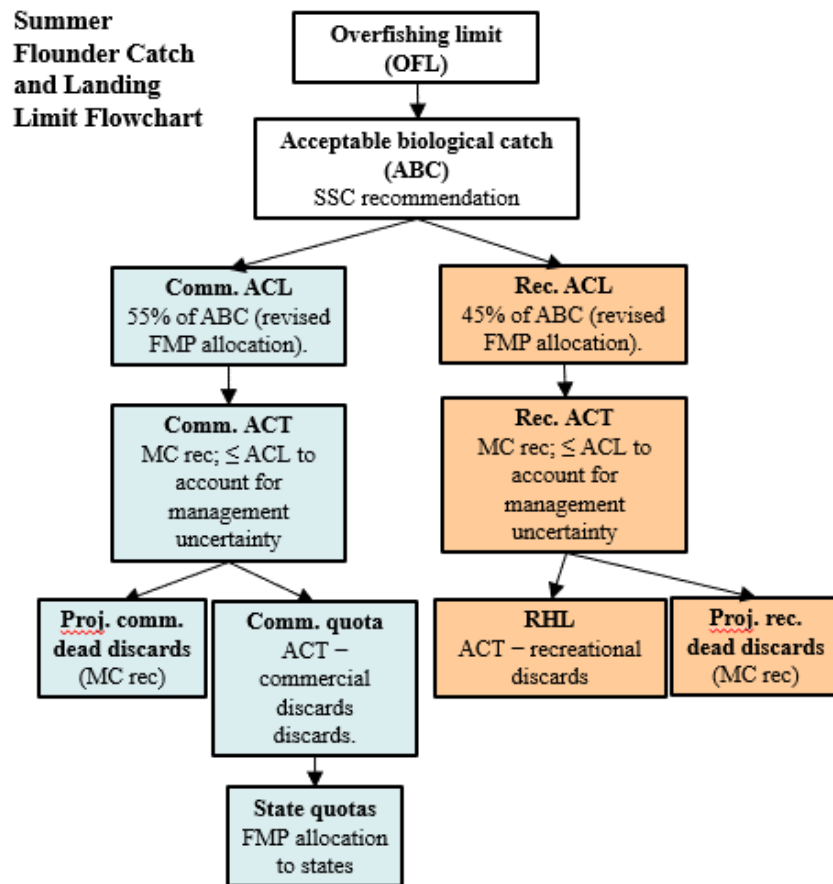


Figure 3: The current catch and landings limit flowchart for summer flounder, updated to reflect commercial/recreational allocation revisions that became effective in 2023.

⁶ <http://www.mafmc.org/actions/sfsbsb-allocation-amendment>

Annual Catch Targets

ACTs are set less than or equal to the sector-specific ACLs to account for management uncertainty. Management uncertainty is comprised of two parts: uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e., estimation errors). Management uncertainty can occur because of a lack of sufficient information about the catch (e.g., due to late reporting, underreporting, and/or misreporting of landings or discards) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels). The Monitoring Committee should consider all relevant sources of management uncertainty in the summer flounder fishery when recommending ACTs.

Consistent with the approach taken for summer flounder in recent years, staff recommend that the commercial and recreational ACTs remain equal to their respective ACLs for 2024-2025, such that no reduction in catch is taken for management uncertainty.

The Monitoring Committee has previously noted that for summer flounder, commercial fishery landings are well controlled with in-season closure authority and commercial quota monitoring systems which typically allow timely reactions to landings levels that approach quotas. The commercial fishery has underharvested their quota since 2018, more notably since 2019 when quotas were increased mid-year by approximately 50% (Table 3). Given the proposed decreases in commercial quota for 2024-2025, the Monitoring Committee may wish to consider the impact that this may have on commercial discards. The last time that the commercial ACL was exceeded based on higher-than-expected discards was in 2017 and 2018, when commercial quotas were quite low (lower than the proposed quota for 2024-2025). In general, commercial dead discards are not strongly correlated with commercial quotas or landings, but there could be more of an impact in unusually low quota years. The Monitoring Committee could consider potential changes in commercial discards in terms of management uncertainty and/or in specifying expected commercial discards (see section below). Staff note that a buffer between the ACL and ACT in response to this concern may exacerbate the problem by further lowering commercial quotas and therefore recommends maintaining ACTs=ACLs.

Recreational fishery performance relative to recreational ACLs and RHLs has been more variable, but below the recreational ACLs in most recent years, more notably so in 2021 and 2022. The Percent Change Approach and the use of a new recreational harvest estimation model (the Recreational Demand Model) were both applied to the development recreational summer flounder measures in 2023 for the first time. Application of this approach for summer flounder in 2023 resulted in unchanged recreational measures. As previously stated, it is not possible to predict 2023 recreational harvest based on currently available data.

The Percent Change Approach considers the RHL in the upcoming year(s) as well as biomass compared to the target level when setting measures. In some cases, RHL and ACL overages are permitted under this approach. In other cases, this approach requires more restrictive measures than would be needed to prevent RHL and ACL overages. The Percent Change Approach will sunset after the 2025 fishing year with the goal of using an improved process for setting 2026 recreational measures. A management action to consider the appropriate replacement for the Percent Change Approach is currently in development.

Additionally, a separate amendment is under development to consider managing for-hire recreational fisheries separately from other recreational fishing modes (referred to as sector separation) and improvements to recreational catch accounting.

Given these ongoing management actions, coupled with the recent trend of recreational catch falling below the ACL, staff recommend no buffer for management uncertainty in the recreational fishery, consistent with past practice for this fishery.

Projected Dead Discards

The Monitoring Committee should recommend projected discards for each sector, to be removed from the sector-specific ACTs to derive the commercial quota and RHL (Figure 3). Typically, the Monitoring Committee has apportioned dead discards based on a 3-year moving average of the proportion of discards from each sector, applied to the total projected discards for the upcoming fishing year(s).

In 2022, when the Monitoring Committee first considered discard projections under the revised catch-based allocations, the group discussed a few different methods for generating projected dead discards by sector. One option considered by the Monitoring Committee, but not applied, was a linear regression approach examining sector dead discards as a function of sector catch, ACLs, or landings (not selected due to a lack of strong correlations for summer flounder). Another option that was not adopted was a simple moving average (e.g., 3 years) of discards in pounds for each sector (not applied due to how much discard levels can vary based on availability of different size classes as well as regulations).

Staff recommend that for 2024-2025, sector discards continue to be calculated by applying the 3-year moving average proportion of discards by sector to total projected dead discards. These projected sector discards are then removed from the sector-specific ACTs. This approach relies on projections of total discards from the NEFSC which account for age structure of the population (Table 8). Under the assumption of averaged 2024-2025 ABCs, staff recommend the previous approach of averaging the very slight differences in total projected dead discards over 2024-2025 to ensure that all limits would be held constant over the two years.

Table 8: ABC projections split into projected total projected landings and discards, for both annual and averaged 2024-2025 ABCs.

Annual						
Year	ABC Total Catch		ABC Landings		ABC Discards	
	mil lb	mt	mil lb	mt	mil lb	mt
2023	33.12	15,023	26.16	11,867	6.96	3,156
2024	17.88	8,111	13.99	6,347	3.89	1,764
2025	20.75	9,411	16.32	7,401	4.43	2,010
Averaged (staff recommendation)						
Year	ABC Total Catch		ABC Landings		ABC Discards	
	mil lb	mt	mil lb	mt	mil lb	mt
2023	33.12	15,023	26.16	11,867	6.96	3,156
2024	19.31	8,761	15.10	6,851	4.21	1,910
2025	19.31	8,761	15.17	6,881	4.14	1,880

Evaluating the proportion of discards by sector from 2020-2022, 56% of dead discards came from the recreational fishery and 44% from the commercial fishery. Applying these proportions to the averaged total projected dead discards of 4.18 million pounds (1,895 mt) in each year under the averaged ABC approach, the resulting projected commercial dead discards are 1.83 million pounds (831 mt) and projected recreational dead discards are 2.35 million pounds (1,064 million pounds; (Table 1).

Commercial Quotas and Recreational Harvest Limits

Subtracting these projected dead discards from the staff recommended commercial and recreational ACTs results in a staff recommended commercial quota of 8.79 million pounds (3,987 mt) and an RHL of 6.35 million pounds (2,879 mt; (Table 1). These values represent a 42% decrease in the commercial quota and a 40% decrease in the RHL compared to the 2023 limits.

The commercial quota is divided among the states based on the allocation percentages specified in the FMP, and each state sets measures to achieve their state-specific commercial quotas (including but not limited to the measures described below that are required by the joint FMP). The commercial allocations to the states were modified via Amendment 21, which became effective on January 1, 2021. The allocation system modifies the state-by-state commercial quota allocations in years when the annual coastwide commercial quota exceeds the specified trigger of 9.55 million pounds. Annual coastwide commercial quota of up to 9.55 million pounds is distributed according to the pre-Amendment 21 state allocations. In years when the coastwide quota exceeds 9.55 million pounds, the *additional* quota amount beyond this trigger is distributed in equal shares to all states except Maine, Delaware, and New Hampshire, which split 1% of the additional quota (Table 9). The total percentage allocated annually to each state is dependent on how much additional quota beyond 9.55 million pounds, if any, is available in any given year. This allocation system is designed to provide for more equitable distribution of quota when biomass is relatively higher, while also considering the historic importance of the fishery to each state.

Table 9: Allocation of summer flounder commercial quota to the states (effective January 2021 via Amendment 21).

State	Total state allocation = baseline quota allocation + additional quota allocation	
	Allocation of baseline quota ≤9.55 mil lb	Allocation of <u>additional</u> quota <u>beyond</u> 9.55 mil lb
ME	0.04756%	0.333%
NH	0.00046%	0.333%
MA	6.82046%	12.375%
RI	15.68298%	12.375%
CT	2.25708%	12.375%
NY	7.64699%	12.375%
NJ	16.72499%	12.375%
DE	0.01779%	0.333%
MD	2.03910%	12.375%
VA	21.31676%	12.375%
NC	27.44584%	12.375%
Total	100%	100%

Commercial Management Measures

Commercial measures that can be modified during specifications are discussed in the sections below, including the commercial minimum fish size, gear regulations, minimum mesh sizes, and exemptions. These measures have remained generally constant since 1999.

Commercial Gear Regulations and Minimum Fish Size

The minimum fish size and mesh requirements may be changed through specifications based on the recommendations of the Monitoring Committee. The current commercial minimum fish size is 14 inches total length and has been in place since 1997. Current trawl gear regulations require a 5.5-inch diamond or 6.0-inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder, i.e., 200 lb in the winter (November 1-April 30) and 100 lb in the summer (May 1-October 31).

In September 2019, the Monitoring Committee revisited the 2018 mesh selectivity study for summer flounder, scup, and black sea bass by Hasbrouck et al. (2018)⁷, which suggested that, in general, the current minimum mesh sizes are effective at releasing catch of most undersized and immature fish. For summer flounder, this study showed a selectivity curve for 6.0" square mesh that did not appear to be equivalent to that of the 5.5" diamond. Results suggested that phasing out the use of the 6.0" square mesh could potentially reduce discards of undersized summer flounder. The Monitoring Committee identified additional analyses and input needed from industry before recommending changes to the mesh size regulations.

⁷ Hasbrouck et al. 2018 is available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf. The Monitoring Committee discussion document from September 2019 is available at <https://www.mafmc.org/s/F5B-Mesh-Size-Issues-Overview-Sept-2019.pdf>, and the MC report from that discussion can be found at: https://www.mafmc.org/s/SFSBSB_MC_Summary_Sept_2019_FINAL.pdf. T

As described in more detail in a supplemental memo for the Monitoring Committee on “Summer Flounder Mesh Regulation Issues,” staff is currently further exploring the 5.5” diamond vs. 6.0” mesh regulation issue based on input provided by the Monitoring Committee in previous discussions, with the intent of revisiting this issue with the Monitoring Committee and Council/Board later in 2023. This will be done in conjunction with the contracted review of mesh size exemptions, as described below. Any potential changes to the existing mesh regulations, if adopted following this later discussion, would likely become effective in 2025 at the earliest. As such, staff recommend to no changes to the minimum mesh size regulations for 2024. Staff also recommend no changes to the current 14-inch minimum fish size, or seasonal possession thresholds triggering the minimum mesh size for 2024-2025.

Minimum Mesh Size Exemptions

This year, the Council has contracted a more in-depth review of the following minimum mesh size exemptions for summer flounder:

- **Small Mesh Exemption Program:** Vessels landing more than 200 lb of summer flounder east of longitude 72° 30.0'W, from November 1 through April 30, and using mesh smaller than 5.5-inch diamond or 6.0-inch square are required to obtain a small mesh exemption program (SMEP) permit from NMFS. The exemption is designed to allow vessels to retain some bycatch of summer flounder while operating in other small-mesh fisheries.
- **Flynet Exemption:** Vessels fishing with a two-seam otter trawl flynet are also exempt from the minimum mesh size requirements. Exempt flynets have large mesh in the wings that measure 8 to 64 inches, the belly of the net has 35 or more meshes that are at least 8 inches, and the mesh decreases in size throughout the body of the net, sometimes to 2 inches or smaller. The bulk of flynet landings in the Greater Atlantic region have historically originated from North Carolina, though the flynet fishery in North Carolina is small. Flynet landings in North Carolina have declined in recent years, and summer flounder have not been landed in the flynet fishery in several years.

The contractor, Andy Loftus, is evaluating these mesh exemptions for further review by the Monitoring Committee and Council/Board later in 2023. The supplemental memo for the Monitoring Committee on “Summer Flounder Mesh Regulation Issues” describes these exemptions and the questions being explored in more detail. Given this evaluation in progress, staff recommend no changes to either mesh size exemption for 2024. The Monitoring Committee and Council/Board will review this issue in more detail later in 2023. Any modifications adopted as the result of these conversations would likely be effective in 2025 or later.

Recreational Management Measures

Recreational management measures for 2024-2025 will be developed later this fall, using the Percent Change Approach. The Monitoring Committee will meet in the fall of 2023 to review available recreational data and Recreational Demand Model estimates of recreational harvest under current measures, and to make recommendations for any adjustments that may be needed to recreational bag, size, and season limits. This will be the first year that multi-year recreational measures (2024-2025) will be considered as specified under the Percent Change Approach.



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 18, 2023
To: Chris Moore, Executive Director
From: Kiley Dancy and Hannah Hart, Staff
Subject: Summer Flounder Mesh Regulation Issues: Overview and Update on Further Evaluation in 2023

Introduction

Two summer flounder mesh regulations topics are being reviewed in more detail in 2023 for Council and Board consideration in December. The first is the equivalence of the current two allowable summer flounder trawl gear minimum mesh sizes (5.5-inch diamond or 6.0-inch square). As described below, a study completed in 2018 suggests that the selectivity of the 6.0" square mesh is not equivalent to that of the 5.5" diamond mesh and the 6.0" square mesh may be retaining too many undersized summer flounder. Council staff has been working to analyze this topic and is planning to discuss with the Monitoring Committee in further detail later this fall for Council/Board review in December.

The second topic includes two summer flounder mesh size exemptions, including a) the small mesh exemption program (SMEP) and b) the flynet exemption. A contractor has been hired to analyze this component and focus on the questions and data analysis described in detail below, with a report to the Council and Board expected in December.

Pending these evaluations, staff recommend no changes to the minimum mesh size or mesh exemption programs for 2024. If potential changes are adopted in December as a result of these evaluations, they would likely become effective in 2025 or later.

Component I: Minimum Mesh Size Requirements

The minimum fish size and mesh requirements may be changed through specifications based on the recommendations of the Monitoring Committee. The current commercial minimum fish size is 14 inches total length (TL) and has been in place since 1997. Current trawl gear regulations require a 5.5-inch diamond or 6.0-inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder, i.e., 200 pounds in the winter (November 1-April 30) and 100 pounds in the summer (May 1-October 31).

In 2016-2017, a mesh size selectivity study for summer flounder, scup, and black sea bass was funded by the Mid-Atlantic Fishery Management Council to address the Council's research priority to "determine mesh selectivity for summer flounder and/or black sea bass and to quantify selectivity at a range of mesh sizes, shapes, and configurations."

The Hasbrouck et al. study report was presented to the Council in April 2018, and is available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf. Study results indicated that the current minimum mesh sizes for summer flounder of 5.5" diamond or 6.0" square do not appear to be equivalent to each other in terms of selectivity. The 6.0" square mesh releases less than 50% of fish at or below the minimum size, and its selectivity appears more similar to a 5.0" diamond mesh (Figure 1).

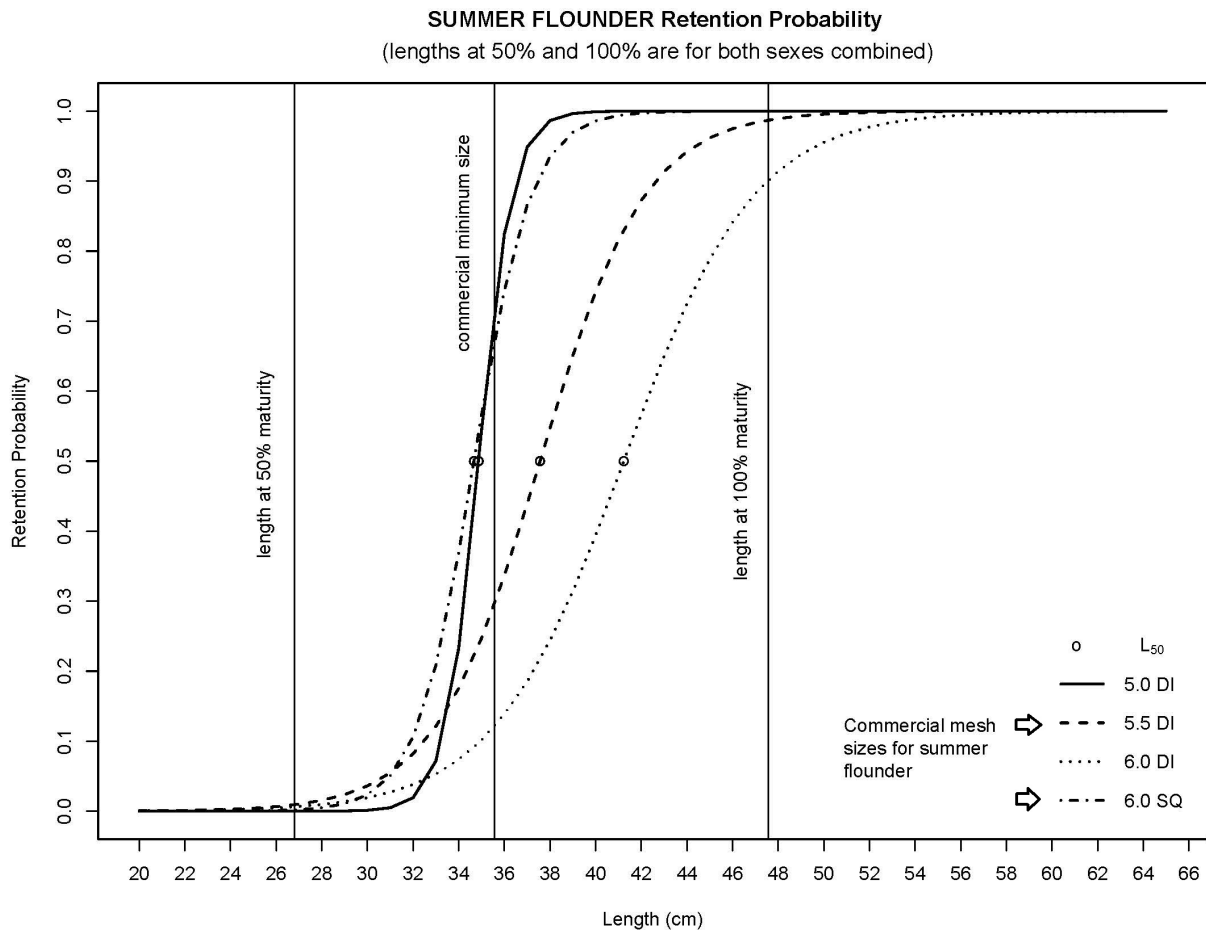


Figure 1: Logistic selective curve for summer flounder catches with 5 codends (4.5" diamond, 5" diamond, 5.5" diamond, 6" diamond, 6" square). Additional details can be found in the study report (Hasbrouck et al., 2018).

The Monitoring Committee identified concerns with the amount of undersized summer flounder caught with the 6.0" square mesh and recommended exploring phasing out the use of 6.0" square mesh to reduce discards of undersized fish. Additional details can be found in the [September 2019 Mesh Size Issue Overview](#).

Preliminary Questions and Potential Data Analysis

The following questions are based on an expanded version of questions the MC previously identified for additional exploration.

- What is the extent of use of 6” square vs. 5.5” diamond? How can we characterize this use by area, fishery/fleet, vessel type, etc.?
- What factors influence the choice of mesh? Are there regional differences and/or circumstances where square mesh is preferred?
- Is a square mesh regulation still needed? If so, what is a more appropriate square mesh equivalent to 5.5” diamond?
 - The Hasbrouck study did not include an alternative square mesh in its experimental mesh sizes (only 6.0” square). What would be needed to identify an alternative square mesh regulation?
- Can we characterize discard rates for summer flounder with 6” square vs. 5.5” diamond?
- What are the biological benefits of phasing out 6” mesh?
- What are industry perspectives on the diamond and square mesh regulations?
- If the mesh size regulations were to change, how long would an appropriate phase out period be?
- What are the costs to industry of changing mesh sizes?

The Monitoring Committee should review the questions and information above and identify a) preliminary information that may address the questions above, if available, (including from the perspective of individual states if relevant information is available), and b) any additional questions that should be evaluated prior to a follow up meeting this fall.

Component II: Mesh Size Exemptions

Small Mesh Exemption Program

Vessels landing more than 200 pounds of summer flounder east of longitude 72° 30.0'W, from November 1 through April 30, and using mesh smaller than 5.5-inch diamond or 6.0-inch square are required to obtain a small mesh exemption program (SMEP) permit from NMFS. The exemption is designed to allow vessels to retain some bycatch of summer flounder while operating in other small-mesh fisheries.

The number of vessels issued a letter of authorization (LOA) for the small mesh exemption program has remained relatively stable since 2013, fluctuating around an average of 68 vessels (Figure 2).

Vessels with Summer Flounder Small Mesh Exemption Permits

By Sara Turner, NOAA GARFO APSD
6.30.2023

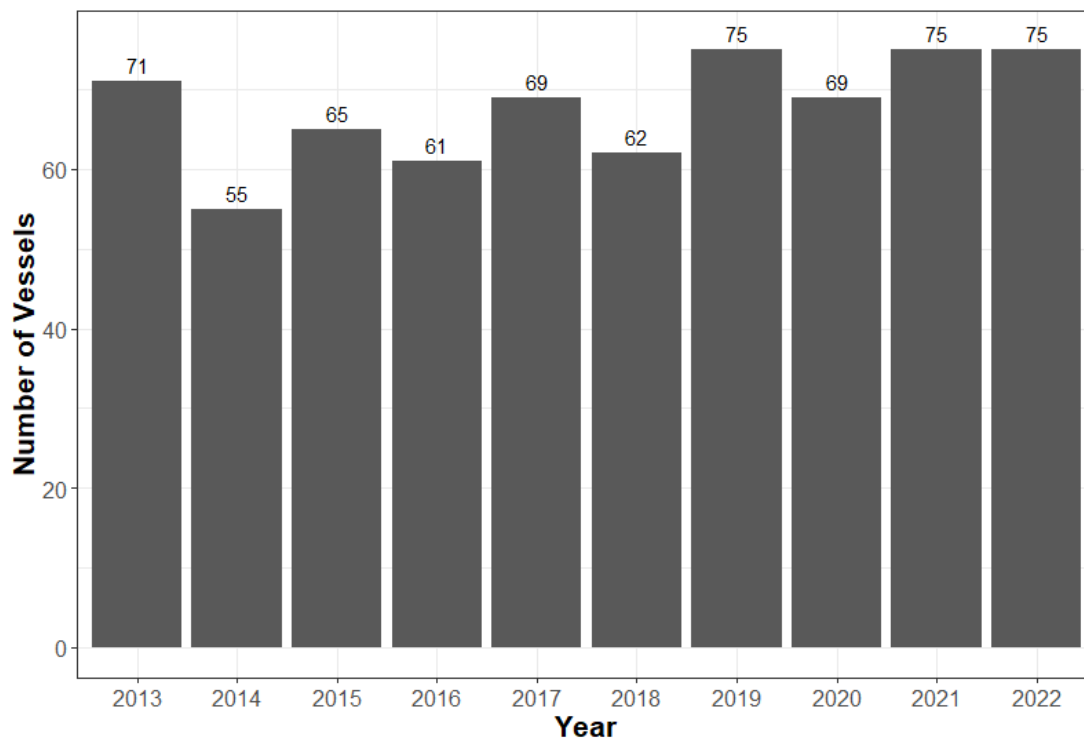


Figure 2: Number of vessels issued the small mesh LOA for the SMEP from fishing year 2013-2022. Source: Pers. Comm., GARFO Analysis & Program Support Division, June 30, 2023.

The FMP requires that observer data be reviewed annually to determine whether vessels fishing seaward of the SMEP line with smaller than the required minimum mesh size and landing more than 200 pounds of summer flounder are discarding more than 10% (by weight) of their summer flounder catch per trip. Typically, staff evaluate the Northeast Fisheries Observer Program (NEFOP) data for the most recent November 1-April 30 period for which complete observer data is available. Due to the timing of observer data availability, typically this means a year-long lag in the analysis is used.

The most recent analysis includes examination of observer data from November 1, 2021 through April 30, 2022 (Table 1). For this time period, a total of 190 trips with at least one tow were observed east of 72° 30.0'W, and of these, 99 trips used small mesh (less than the 5.5" diamond minimum mesh size for summer flounder; Table 1). Of those 99 trips, 50 trips (51%) reported landing more than 200 pounds of summer flounder. Of those 50 trips, 11 trips (22%) discarded more than 10% of their summer flounder catch. The percentage of trips that met all these criteria relative to the total number of observed trips east of 72° 30.0'W is 5.97% (11/190 trips; Table 1).

Although the amount of observed discards from these trips is low relative to the commercial catch limit, because these observed trips are a subset of the fishery operating under this exemption, the actual extent of discards under the exemption program is not known.

The contractor is exploring several questions to determine if changes to the exemption program may be warranted and if so, what changes might be appropriate. Preliminary questions and

potential data analysis include a number of topics as shown below. Industry perspectives will also be sought on the exemption program, including whether the program is still needed or whether changes are desired.

Monitoring Committee feedback on these preliminary questions and potential data analysis will provide guidance to the contractor over the next several months and identify if additional ideas should be explored.

Preliminary Questions and Potential Data Analysis

- What was the original intention of the regulation and how is that being served today?
- Are changes to the SMEP needed relative to the area, timing, possession limit, or other?
- How are vessels using the exemption and in which fisheries? Has use of the exemption program changed over time?
- What are industry perspectives and recommendations on the exemption program?
- Is the extent of summer flounder discards under this exemption a problem?
- Is the exemption program still needed?

Table 11: Numbers of observed trips that meet specific criteria based on NEFOP data from November 1-April 30 for 2014 through 2022.

Criteria		Nov. 1, 2015 – April 30, 2016	Nov. 1, 2016 – April 30, 2017	Nov. 1, 2017 – April 30, 2018	Nov. 1, 2018 – April 30, 2019	Nov. 1, 2019 ~March 19, 2020 ^a	Nov. 1, 2020 – April 30, 2021	Nov. 1, 2021 – April 30, 2022
A	NEFOP observed bottom trawl trips over this time frame (Nov-April)	398	398	741	657	403	151	232
B	Observed trips with at least one catch record east of 72° 30' W Longitude	302	302	598	534	322	122	190
C	That met the criteria in row B <u>and</u> used small mesh at some point during their trip	177	177	271	261	145	33	99
D	That met the criteria in rows B-C <u>and</u> landed more than 200 pounds summer flounder on whole trip	67	67	90	114	63	22	50
E	That met the criteria in rows B-D <u>and</u> discarded >10% of summer flounder catch east of 72° 30' W Longitude	12	12	35	33	18	4	11
F	% of observed trips with catch east of 72° 30' W Longitude that also used small mesh, landed >200 pounds of summer flounder, and discarded >10% of summer flounder catch (row E/row B)	3.97%	3.97%	5.85%	6.18%	5.59%	3.28%	5.79%
G	Total summer flounder discards (pounds) from trips meeting criteria in B-E	10,992	10,992	22,798	9,925	6,547	1,605	4,775
H	Total summer flounder landings (pounds) from trips meeting criteria in B-E	10,523	10,523	44,711	23,038	13,340	9,165	20,080
I	Total catch (pounds) from trips meeting criteria in B-E	21,515	21,515	67,508	32,963	19,887	10,770	24,856

^a Due to the COVID-19 pandemic, observer requirements were first waived on March 20, 2020. Due to the waived observer requirement, the full time period could not be evaluated and the analysis for that time period only examines observer data from November 1, 2019 through approximately March 19, 2020.

Flynet Exemption Program

Vessels fishing with a two-seam otter trawl flynet are also exempt from the minimum mesh size requirements. Exempt flynets have large mesh in the wings that measure 8 to 64 inches, the belly of the net has 35 or more meshes that are at least 8 inches, and the mesh decreases in size throughout the body of the net, sometimes to 2 inches or smaller. This exemption was created through Amendment 2 in 1993, as suggested by the South Atlantic Fishery Management Council and the State of North Carolina to accommodate flynet fisheries targeting other species and catching limited amounts of summer flounder. The NMFS Regional Administrator may withdraw the exemption if the annual average summer flounder catch in the flynet fishery exceeds 1% of the total flynet catch.

Typically, the Monitoring Committee reviews data from the North Carolina flynet fishery as the bulk of flynet landings in the Greater Atlantic region originate from North Carolina, though the flynet fishery in North Carolina is small. The memorandum provided by Lorena de la Garza dated June 30, 2023 (see Attachment) indicates that no summer flounder were landed in the North Carolina flynet fishery in 2022. Previous memos indicate that summer flounder have not been landed in this fishery since 2014, and have also noted that flynet landings in North Carolina have declined in recent years due to shoaling issues at Oregon Inlet.

Table 2: North Carolina flynet fishery summer flounder landings in pounds, as a percent of total North Carolina flynet landings, and as a percent of total North Carolina commercial summer flounder landings, 2005-2022. Some values are confidential but as denoted below are <2,000 lb in those years.

Year	Summer Flounder Flynet Landings (lb)	% of Total NC Flynet Landings	% of total NC commercial summer flounder landings
2005	4,102	0.05%	0.10%
2006	5,752	0.07%	0.15%
2007	7,067	0.13%	0.26%
2008	3,147	0.08%	0.07%
2009	2,842	0.05%	0.10%
2010	<2,000 lb	<0.05%	<0.06%
2011	<2,000 lb	<0.05%	<0.07%
2012	<2,000 lb	<0.05%	<0.18%
2013	0	0%	0.00%
2014	<2,000 lb	<0.05%	<0.07%
2015	0	0%	0.00%
2016	0	0%	0.00%
2017	0	0%	0.00%
2018	0	0%	0.00%
2019	0	0%	0.00%
2020	0	0%	0.00%
2021	0	0%	0.00%
2022	0	0%	0.00%

The flynet exemption was explored in more depth through the Monitoring Committee's 2015 comprehensive review of commercial management measures.¹ The Monitoring Committee determined at the time that other states, including Virginia, New Jersey, and Maryland may have small amounts of flynet landings; however, data were limited or unavailable for most other states and flynet landings of summer flounder in these states were believed to be insignificant.

A January 2020 public comment from a New Jersey fisherman² asserted that this exemption is being used more frequently than indicated by the Monitoring Committee analyses, and that many New Jersey vessels have been using this exemption to increase their flexibility to retain summer flounder on multispecies trips. He states that these vessels are using "high rise" nets that fall under the flynet definition, and as a result they are able to retain more than 200 pounds of summer flounder during the November 1-April 30 period without switching to summer flounder mesh sizes. He also requests a change in the definition of exempt flynet gear to include four-seam nets (in addition to two-seam nets) as well as some clarifying modifications to the regulatory language.

In response to this request, at their 2020 meeting, the MC noted that there is a need to better understand the use and configuration of flynet and high rise trawl nets as they relate to this exemption. Additional information provided by Board member Emerson Hasbrouck indicates that the use of two-seam nets is rare in the Mid-Atlantic and Southern New England winter offshore trawl fishery. This may indicate a possible compliance and enforcement issue if vessels that don't meet the regulatory definition (which specifies a two-seam net) believe they are fishing under the flynet exemption. However, the Monitoring Committee stated that additional evaluation is needed to verify this. The Committee also indicated a need to better understand the differences between a two-seam and four-seam net before commenting on whether an expansion of the flynet exemption definition is warranted. The group agreed that a change in this definition could lead to an increase in the number of vessels using this exemption and the consequences of this should be thoroughly understood before changes are adopted. The Monitoring Committee recommended exploration of the extent to which existing datasets allow for evaluation of specific trawl gear configurations, and noted the need for input from gear experts, industry, and enforcement on this issue.

Similar to the SMEP topic, a list of preliminary questions and potential data analysis has also been developed for the flynet exemption program and is provided below. The MC should provide feedback on these preliminary questions and potential data analysis to provide guidance to the contractor over the next several months and help identify if additional ideas should be explored.

Preliminary Questions and Potential Data Analysis

- What was the original intention of the regulation and how is that being served today?
- Better understand the use and configuration of 2-seam otter trawl flynet and high-rise trawl nets as they relate to this exemption.
 - Determine the extent to which the exemption is being applied.
 - Determine the extent to which 4-seam nets (which do not comply with the definition) and "high rise" nets that fall under the flynet definition are being used.
- The language in the current federal regulations regarding the evaluation criteria for this exemption is inconsistent with the original language and intent of the exemption.

¹ See the report at: http://www.mafmc.org/s/Tab11_SF-S-BSB-Commercial-Measures.pdf.

² See attachment at: <https://www.mafmc.org/s/Fluke-mesh-exemption-memo-MC-May-2020.pdf>.

- In the original implementation, the language specified that if the Regional Administrator “determines after a review of Sea Sampling, landing, or other data that the summer flounder catch in the fly net fishery exceeds 1% of the total catch in the fly net fishery, he may rescind the exemption.” However, the current regulations refer to evaluating whether “vessels fishing under the exemption, on average, are discarding more than 1 percent of their entire catch of summer flounder per trip.”
- What are industry perspectives and recommendations on the exemption?



Attachment

ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

KATHY B. RAWLS
Director

Memorandum

To: Kiley Dancy, MAFMC

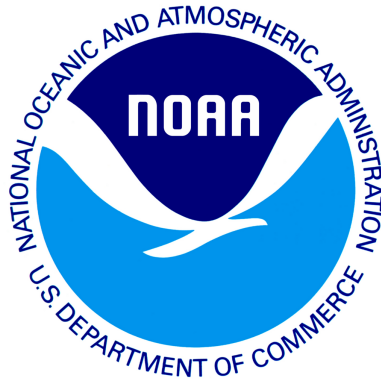
From: Lorena de la Garza, NCDMF

Date: June 30, 2023

Subject: Species composition and landings from the 2022 North Carolina flynet fishery

The 2022 North Carolina flynet fishery landed 22,366 pounds of finfish consisting of black sea bass, scup, monkfish (whole), weakfish, butterfish, and smooth dogfish. No summer flounder landings occurred from the flynet fishery in 2022. The 2022 North Carolina flynet fishery landings are not reported within a table because the data are confidential and cannot be distributed to sources outside the North Carolina Division of Marine Fisheries (North Carolina General Statute 113-170.3 (c)). Confidential data can only be released in a summarized format that does not allow the user to track landings or purchases to an individual. In general, the number of flynet trips and the overall landings across species has seen a significant decrease, particularly in the last decade. The decrease can be attributed to reduced fishing effort on targeted fish species and shoaling at Oregon Inlet continues to result in a low number of flynet boats landing in the northern ports of North Carolina.

draft working paper for peer review only



Summer flounder

2023 Management Track Assessment Report

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Fisheries Science Center
Woods Hole, Massachusetts

Compiled 06-08-2023

This assessment of the Summer flounder (*Paralichthys dentatus*) stock is an update of the existing 2021 Management Track Assessment (NEFSC 2022). Based on the previous assessment the stock was not overfished and overfishing was not occurring. This 2023 Management Track Assessment updates fishery catch data, research survey indices of abundance, the ASAP assessment model, and biological reference points through 2022. Additionally, stock projections have been updated through 2025.

State of Stock: Based on this updated assessment, the Summer flounder (*Paralichthys dentatus*) stock is not overfished and overfishing is occurring (Figures 1-2). Retrospective adjustments were not made to the model results. Spawning Stock Biomass (SSB) in 2022 was estimated to be 40,994 mt which is 83% of the biomass target for this stock (SSB_{MSY} proxy = 49,561; Figure 1). The 2022 fully selected fishing mortality was estimated to be 0.464 which is 103% of the overfishing threshold proxy (F_{MSY} proxy = 0.451; Figure 2).

Table 1: Catch and model results for Summer flounder. All weights are in (mt), recruitment is in (000s), and F_{Full} is the fishing mortality on fully selected age 4. Model results are unadjusted values from the current updated ASAP assessment.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<i>Data</i>										
Commercial landings	5,696	4,989	4,858	3,537	2,644	2,787	4,109	4,282	4,936	5,683
Commercial discards	863	830	703	772	906	979	783	1,163	873	680
Recreational landings	8,806	7,364	5,366	6,005	4,565	3,447	3,537	4,571	3,092	3,916
Recreational discards	2,119	2,092	1,572	1,482	1,496	1,003	1,379	1,141	997	1,336
Catch for Assessment	17,483	15,275	12,498	11,796	9,611	8,216	9,808	11,157	9,898	11,615
<i>Model Results</i>										
Spawning Stock Biomass	52,155	47,841	42,424	39,209	37,040	37,599	38,846	43,024	41,615	40,994
F_{Full}	0.473	0.439	0.427	0.428	0.345	0.304	0.37	0.417	0.371	0.464
Recruits (age 0)	35,208	38,700	27,000	30,551	38,876	43,028	39,933	35,629	42,323	38,371

Table 2: Comparison of biological reference points estimated in the previous assessment and from the current assessment update. An $F_{35\%}$ proxy was used for the overfishing threshold and SSB and MSY proxies were based on long-term stochastic projections.

	2021	2023
F_{MSY} proxy	0.422	0.451
SSB_{MSY} (mt)	55,217	49,561 (38,181 - 64,301)
MSY (mt)	15,872	14,097 (11,020 - 18,114)
Median recruits (age 1) (000s)	49,954	46,966
<i>Overfishing</i>	No	Yes
<i>Overfished</i>	No	No

Projections: Short term projections of catch (OFL) and Spawning Stock Biomass (SSB) were derived by sampling from an empirical cumulative distribution function of the 12 most recent recruitment estimates from the ASAP model results (2011-2022). The annual fishery selectivity, maturity ogive, and mean weights at age used in projections are the most recent 5 year averages; no retrospective adjustments were applied in the projections.

Table 3: Short term projections of total fishery catch (OFL) and Spawning Sstock Biomass (SSB) for Summer flounder based on a harvest scenario of fishing at F_{MSY} proxy between 2024 and 2025. Catch in 2023 was assumed to be 15,023 (mt).

Year	Catch (mt)	SSB (mt)	F_{Full}
2023	15,023	37,233 (30,000 - 46,000)	0.622
Year	Catch (mt)	SSB (mt)	F_{Full}
2024	10,422	38,541 (32,000 - 46,000)	0.451
2025	10,839	39,127 (33,000 - 46,000)	0.451

Special Comments:

- What are the most important sources of uncertainty in this stock assessment? Explain, and describe qualitatively how they affect the assessment results (such as estimates of biomass, F, recruitment, and population projections).

Declining trends in growth rates and changes in the sex-ratio at age may change the productivity of the stock and in turn affect estimates of the biological reference points. Changes in growth, maturity, and recruitment may be environmentally mediated but mechanisms are unknown.

- Does this assessment model have a retrospective pattern? If so, is the pattern minor, or major? (A major retrospective pattern occurs when the adjusted SSB or F_{Full} lies outside of the approximate joint confidence region for SSB and F_{Full})

The 7-year Mohn's ρ , relative to SSB, was 0.03 in the 2021 assessment and was 0.06 in 2022. The 7-year Mohn's ρ , relative to F, was 0.01 in the 2021 assessment and was 0.03 in 2022. No retrospective adjustment of SSB or F in 2022 was required.

- Based on this stock assessment, are population projections well determined or uncertain? If this stock is in a rebuilding plan, how do the projections compare to the rebuilding schedule?

Population projections for Summer flounder are reasonably well determined.

- Describe any changes that were made to the current stock assessment, beyond incorporating additional years of data and the effect these changes had on the assessment and stock status.

No major changes, other than the addition of three years of data, were made to the Summer flounder assessment for this update. Minor changes to the survey input CVs and fishery and survey input Effective Sample Sizes improved model diagnostics but had limited affects on the model results.

- If the stock status has changed a lot since the previous assessment, explain why this occurred.

Overfishing status has changed since the last assessment for Summer flounder. The stock status remains as not overfished but overfishing is occurring.

- Provide qualitative statements describing the condition of the stock that relate to stock status.

The current fishing mortality rate is near the threshold, and so recent near-average recruitment has resulted in relatively stable SSB. SSB is projected to remain relatively stable in the short term at current fishing rates.

- Indicate what data or studies are currently lacking and which would be needed most to improve this stock assessment in the future.

The Summer flounder assessment could be improved with more intensive and comprehensive sampling of the fishery catch by sex.

- Are there other important issues?

Sufficient length and age sampling of the fishery catch needs to be maintained.

References:

NEFSC. 2022. Northeast Fisheries Science Center. Management Track Assessment June 2021. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 22-10; 79 p. <http://www.nefsc.noaa.gov/publications/crd/crd2210/>.

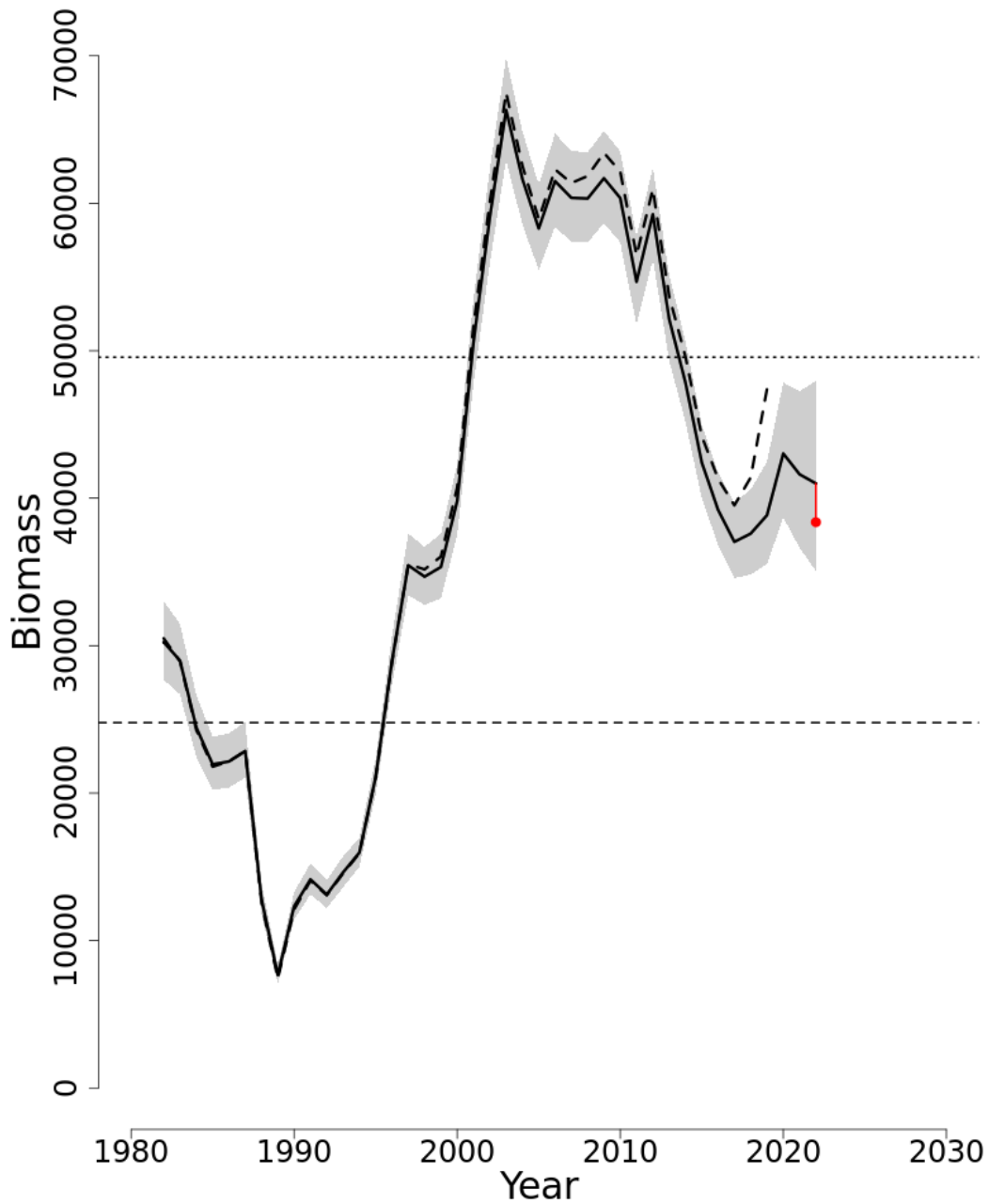


Figure 1: Trends in spawning stock biomass of Summer flounder between 1982 and 2022 from the current (solid line) and previous (dashed line) assessment and the corresponding $SSB_{Threshold}$ ($\frac{1}{2} SSB_{MSY}$ proxy; horizontal dashed line) as well as SSB_{Target} (SSB_{MSY} proxy; horizontal dotted line) based on the 2023 assessment. Biomass adjusted for a retrospective pattern is shown in red, but not used for stock status or projections. The approximate 90% lognormal confidence intervals are shown.

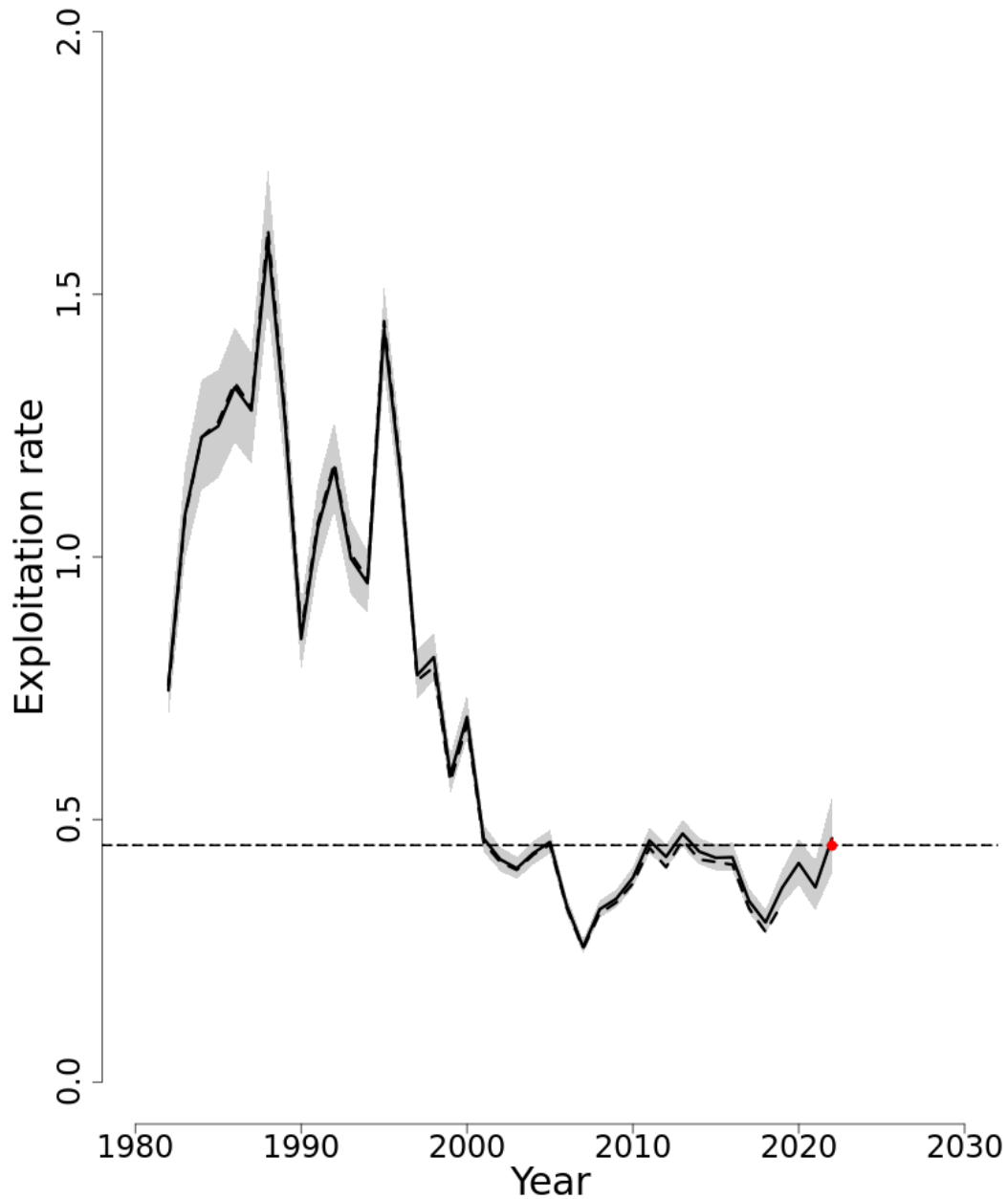


Figure 2: Trends in the fully selected fishing mortality (F_{Full}) of Summer flounder between 1982 and 2022 from the current (solid line) and previous (dashed line) assessment and the corresponding $F_{Threshold}$ (F_{MSY} proxy=0.451; horizontal dashed line). F_{Full} adjusted for a retrospective pattern is shown in red, but not used for status or projections. The approximate 90% lognormal confidence intervals are shown.

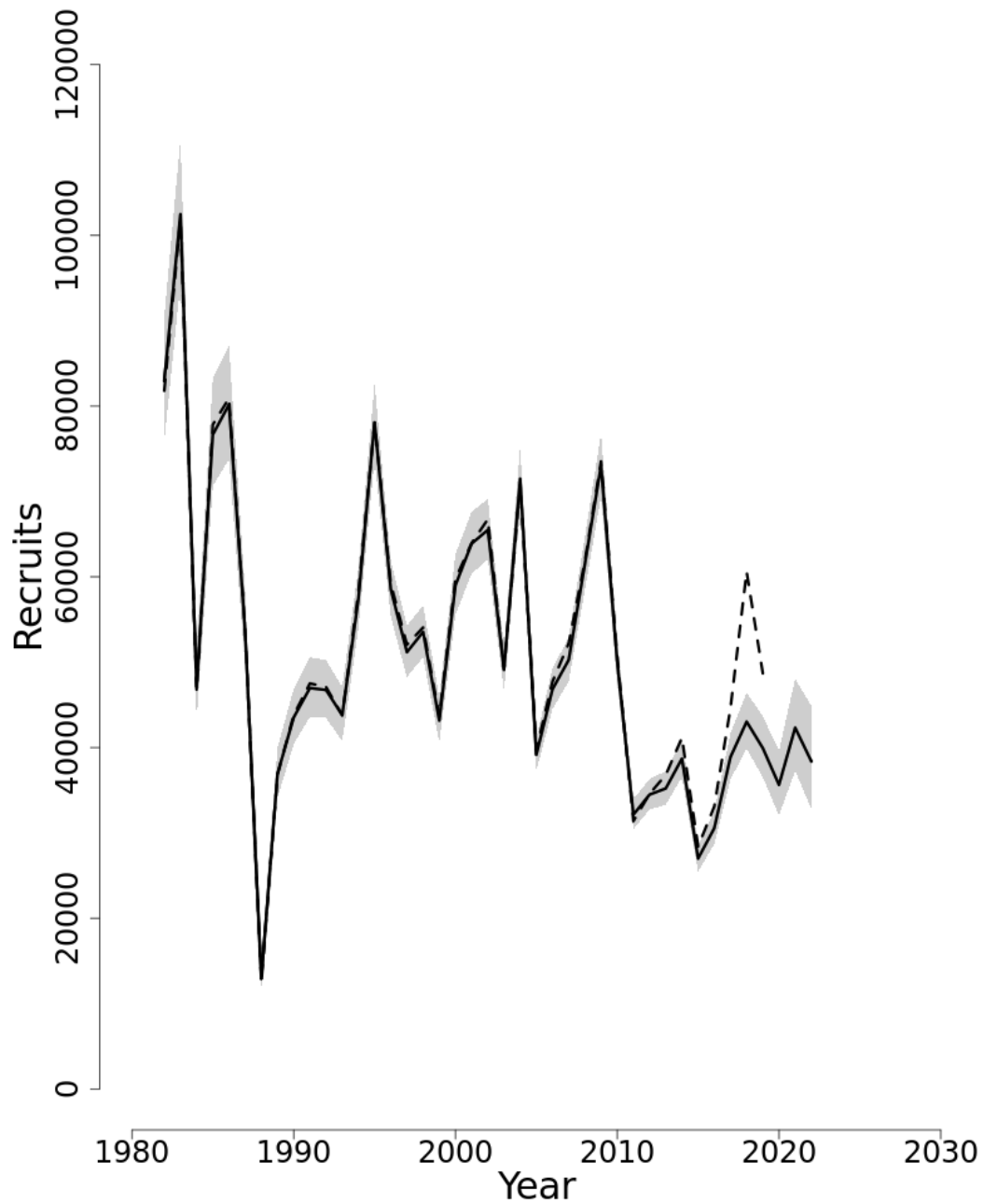


Figure 3: Trends in Recruits (age 0) (000s) of Summer flounder between 1982 and 2022 from the current (solid line) and previous (dashed line) assessment.

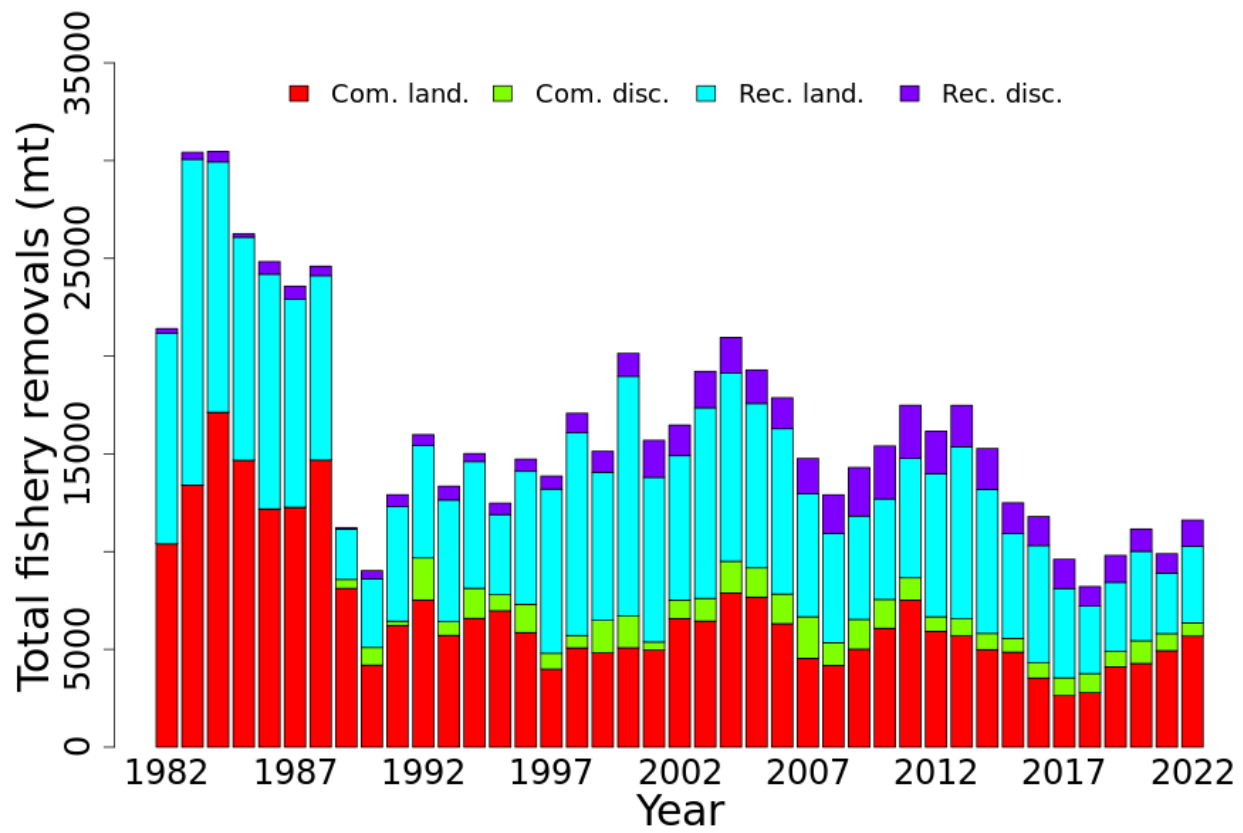


Figure 4: Total catch of Summer flounder between 1982 and 2022 by fishery (commercial and recreational) and disposition (landings and discards).

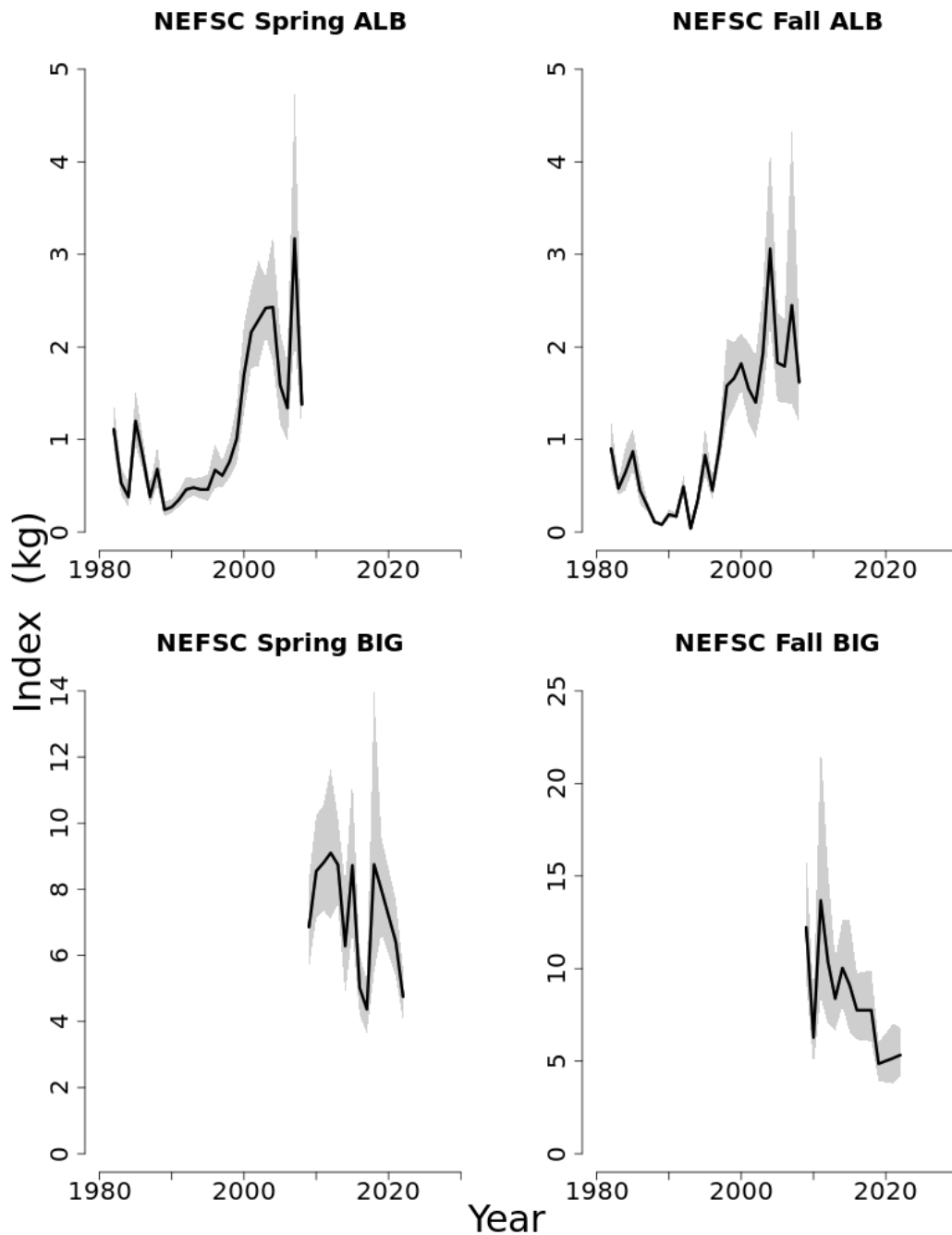


Figure 5: Indices of biomass for the Summer flounder between 1982 and 2022 for the Northeast Fisheries Science Center (NEFSC) Albatross IV (ALB) and Henry B Bigelow (BIG) spring and fall research bottom trawl survey series. The approximate 90% lognormal confidence intervals are shown.



Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report June 2023

The Mid-Atlantic Fishery Management Council's (Council's) Summer Flounder, Scup, and Black Sea Bass Advisory Panel (AP) met jointly with the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass AP on June 21, 2023 to review the Fishery Information Documents and develop the following Fishery Performance Report for all three species. The primary purpose of this report is to contextualize catch histories for the Scientific and Statistical Committee (SSC) by providing information about fishing effort, market trends, environmental changes, and other factors.

Please note: Advisor comments described below are not necessarily consensus or majority statements.

Additional comments provided by advisors via email are attached to this document but are not incorporated into the summary below.

Council Advisory Panel members present: Katie Almeida (MA), Carl Benson (NJ), Joan Berko (NJ), Frank Blount (RI)*, Eric Burnley (DE), Joseph Devito (NY), James Fletcher (NC), Jeremy Hancher (PA), Victor Hartley (NJ), Greg Hueth (NJ), Bob Pride (VA), George Topping (MD), Mike Waine (NC), Harvey Yenkinson (PA)

Commission Advisory Panel members present: Frank Blount (RI)*, Phil Michaud (MA), Bill Shillingford (NJ)

*These individuals serve on both the Council and Commission APs.

Others present: Chris Batsavage, Tracey Bauer, Julia Beaty, John Boreman, Haley Clinton, Sarah Cvach, Kiley Dancy, Jason Didden, Steve Doctor, Michelle Duval, Mark Grant, Hannah Hart, Mark Holliday, Jesse Hornstein, José Montañez, Adam Nowalsky, Phil Simon, Chelsea Tuohy, two unidentified participants via phone only.

Discussion questions

1. What factors influenced recent catch (markets/economy, environment, regulations, other factors)?
2. Are the current fishery regulations appropriate? How could they be improved?
3. What would you recommend as research priorities?
4. What else is important for the Council to know?

Summer Flounder

Fishery Performance

One advisor said he appreciated the Overfishing Limit (OFL) and Acceptable Biological Catch (ABC) performance information in the Fishery Information Documents and presentation this year. He asked whether it's typical for catch to be approximately 30% below the OFL on a regular basis. Staff said several factors impact how close catch gets to the OFL, including the buffer between the OFL and the ABC and the fishery performance relative to the ABC. The buffer between the OFL and ABC for summer flounder is larger than it is for scup and black sea bass due to summer flounder stock status. The commercial and recreational fisheries have each been below their respective ACLs in most or all recent years. These underages could be driven by a combination of factors including regulations, other drivers of effort, and/or availability.

This advisor requested the addition of fishing mortality or F/Fmsy estimates to the table once the new assessment is available. He also said he struggles to understand the conservation need for leaving such a large underage on the table, especially for the recreational sector. He questioned whether the information reviewed by and provided by advisors was meant to check a box or if it could be used to improve management and provide more fishing access.

Stock Availability and Trends

Another advisor suggested that catch is so far under the limits because the fishery is controlling itself, in that the fish are less available and therefore landings are down. While he appreciates that regulations for summer flounder have gotten less restrictive, he thought it would be better to tighten the regulations for summer flounder while loosening them for scup and black sea bass, which have frequent overages because they are so abundant. He noted that fishermen are still catching a lot of summer flounder, but most of them are not keepers, and that harvest is way down due to low availability of larger fish.

Another advisor agreed that the summer flounder stock may not be as robust as we think. He noted that given underages of the catch limits for so many years, we would expect more stock growth than we are currently seeing. He thought part of that was due to low recruitment, but questioned whether part of it could also be that the stock's natural mortality is higher than we are assuming.

A commercial advisor mentioned that he fishes for horseshoe crabs, and normally this time of year they would be catching one or two flounders per tow. This year, they are noting many more smaller 16-20 inch flounders being caught, up to 50-70 pounds per tow. One advisor said he heard that the NEAMAP survey bottom temperature observations are 6-10 degrees colder than the last 20 years, impacting the seasonal availability of target species. From his perspective, this year everything seems to be running about two weeks behind schedule in terms of where and when they would usually find certain species.

Another advisor connected this comment to the "Squid Squad," which is a scientist and industry partnership group that meets weekly to discuss oceanographic conditions and correlate them to patterns observed in the *Illex* squid fishery. She suggested it may be worth trying to conduct a similar exercise for the summer flounder fishery.

Market/Economic Conditions and Commercial Fishery Issues

One advisor noted that industry members at the Town Dock (out of Rhode Island) have reported terrible market prices this year. Industry members did not mention possible drivers of the low market prices, but this advisor said she could inquire further.

Another advisor also noted very low prices for summer flounder, as low as \$0.46 per pound recently in Maryland. This, in combination with high fuel costs, has resulted in a decrease in fishing activity. It is not worth spending \$10,000 to \$15,000 on trip costs to catch \$5,000 worth of fish.

A commercial fisherman from Massachusetts noted that in the last 3-5 years he has seen mostly medium size fluke and very few large and jumbos. The medium fish at approximately 16-18 inches shoot through the 6.5-inch codends they are using, so summer flounder are not caught very efficiently using that size mesh. However, this year, he is now seeing many large and jumbos which is exciting, although it's not clear why this is happening.

Recreational Fishery Issues

Two advisors commented on the recreational slot limit in New Jersey (two fish allowed at 17-17.99 inches and one fish above 18 inches). One advisor shared his concerns that it has not been successful in lowering the harvest of female fish in the recreational fishery. Based on his observations, less than 5% of harvest is male. Another advisor expressed his support for the slot limit regulations, but thought they should be modified to either a single slot, or two slot limits with one fish allowed in each. This advisor also supported further discussions on sector separation for the for-hire sector.

Research Recommendations

One advisor emphasized the importance of understanding why the center of biomass is shifting north. His perspective is that the oceanographic data (such as temperature and pH) do not explain the magnitude of this shift, because the changes are well within the preferred habitat parameters of summer flounder. If this movement continues, it will have serious implications for both the commercial and recreational fisheries, so the drivers of distribution changes should be better understood. He believes it is related to asymmetric fishing pressure along the coast. He also supports prioritizing research into why summer flounder recruitment has been below average.

This advisor also expressed concern that we don't know as much as we should about the migration patterns of summer flounder beyond a general East-West pattern. Finally, this advisor recommended that we find better ways to conduct population surveys than trawl surveys, which disturb fish and their habitat and kill a lot of fish. Newer and better technology may exist to conduct surveys without killing the fish and destroying vulnerable habitats.

Scup

Stock Availability and Trends

Multiple advisors suggested that the overages in scup catch were likely due to the abundance of the stock, contrasting this with summer flounder which has underages and lower availability. One advisor said we are overregulating the fishery and the current management system seems

backwards. This advisor recommended loosening regulations for abundant stocks, like scup and black sea bass, and tightening regulations for the less abundant stocks, like summer flounder.

Market/Economic Conditions and Commercial Fishery Issues

One advisor noted that he could viably target scup if he used a smaller codend and if regulations allowed the fishery to operate during the night. The advisor said scup are plentiful in certain areas around Massachusetts but the lack of a market for scup discourages him from targeting the species.

Recreational Fishery Performance and Fishery Issues

Some advisors questioned the significant increase in recreational scup catch and expressed disbelief in MRIP estimates. One advisor noted he is not trying to pick on MRIP, but questioned where this significant increase in scup catch is coming from, and questioned if it was from that 2015-year-class or other factors. One advisor noted that if over 17 million scup were landed last year, then we should be seeing that level of catch come to shore and questioned if state agencies, especially New York, are seeing that level of scup harvest. The advisor also noted that it is hard to believe that the amount of scup harvest coming out of New York alone is greater than the entire coastwide harvest of summer flounder. The advisor expressed the need to get a better understanding of scup harvest and questioned if other AP members were seeing this level of catch on the water. One advisor noted that headboats out of New York are catching large quantities of scup but was unsure if it was as high as the level estimated through MRIP. Another advisor noted that he has not experienced the level of scup harvest estimated through MRIP out of New Jersey and said for-hire boats were not regularly catching scup last year until around August/September and scup catch dropped off significantly in the late fall.

Several advisors voiced frustration with the 2023 recreational scup season in New Jersey and felt the August 1 start date was too restrictive and unfair given neighboring states are opening their season several months prior. One advisor emphasized that New Jersey's recreational landings constitutes such a small percentage of the total coastwide harvest, making the late start date seem disproportionate. Some advisors said the late New Jersey start date was particularly damaging to the for-hire industry given scup has been an important target species early in the year. One advisor expressed concern about the ripple effect the restrictive regulations will have on businesses beyond the for-hire sector, such as tackle shops and marinas. Another advisor questioned the rationale behind connecting scup and black sea bass in determining New Jersey's regulations and advocated for better alignment with regulations in other states.

Two advisors stressed the importance of keeping scup open year-round for the for-hire sector, especially for those not targeting summer flounder or during black sea bass closures. These advisors requested recreational sector separation to ensure continued fishing opportunities for for-hire boats. One for-hire advisor also noted the importance of keeping scup open in New Jersey due to the decline in ling (red hake) catch.

Black Sea Bass

Recreational Fishery Issues

One advisor noted that Rhode Island has more restrictive recreational black sea bass measures than most other states. He noted that uniform proportional reductions in harvest across all states have been normalized in recent years, but are especially hard on states with the most restrictive measures

to start with. He said it feels like some states are being penalized for conservation measures taken in the past. He appreciated that the for-hire sector in Rhode Island and Connecticut didn't need to take another big cut this year, but they are currently operating under a very restrictive two fish possession limit.

Another advisor who fishes out of southern New Jersey cautioned against liberalizing measures to allow increased harvest of black sea bass given that stock assessment is not a perfect science. He said fisheries for other species have been lost after having very high abundance. He said it's nice for anglers to be able to catch black sea bass every time they go out, unlike summer flounder, which only the best fishermen tend to catch. He recommended managing the black sea bass stock for continued high abundance.

A for-hire captain based in New Jersey disagreed and said it feels like the recreational black sea bass fishery is continually penalized despite the robustness of the stock. He said the for-hire sector needs to be managed separately from the private recreational sector, noting that for-hire catch can be tracked with vessel trip reports. He hoped implementing separate management would lead to more favorable open seasons for the for-hire sector, enabling them to increase their income. He expressed concern about reduced fishing opportunities for striped bass due to recent actions taken by the Atlantic States Marine Fisheries Commission. He hoped that black sea bass could have a longer open season given that they are so abundant.

Another recreational fishing advisor disagreed with the previous recommendation to manage for abundance and expressed concern that management may miss an opportunity to take advantage of the currently high biomass given that it is declining from a peak. He noted that past high year classes are phasing out of the biomass and stock dynamics are not just driven by the fishery, but are also impacted by environmental factors. He recommended that the fisheries be allowed to take advantage of this high biomass, especially given that black sea bass is a food fish, as opposed to some other species which have a greater catch and release component to the recreational fisheries. He also noted that the stock assessment does not assume a relationship between stock size and recruitment; therefore, being more conservative than necessary now may not lead to increased biomass in the future. He added that the currently restrictive regulations feel very disconnected from the high biomass.

Another recreational fishing advisor from New Jersey noted that the black sea bass stock was rebuilt under much higher possession limits and much smaller minimum sizes than the current measures. He noted that the recreational minimum size in New Jersey decreased from 13 to 12.5 inches in 2023, which helped reduce discards. Anglers didn't have to fish as long or discard as many fish before they caught a keeper compared to in 2022 under the higher minimum size limit.

Another recreational fishery advisor from Delaware recommended consideration of lowering the minimum fish size to 12.5 inches in additional states to achieve similar benefits as previously described (i.e., reduce discards, achieve the possession limit faster, and end the fishing day sooner).

A recreational fishery advisor from Rhode Island expressed concern about previous comments related to high abundance and restrictive regulations. He reminded the group that the regulations are so restrictive because black sea bass are so easy to catch. If the regulations were less restrictive, the recent recreational overages would be even greater. He said when abundance is high, effort also increases. He added that he did not disagree with the recommendations for sector separation,

but struggled to understand what other changes advisors had in mind when they suggested regulations should be less restrictive due to high biomass.

One commercial fishery advisor said all recreational fishermen should be required to report their catches through a cell phone application. He also recommended that the recreational fishery be managed with a total cumulative length limit (i.e., all fish are retained until the combined length of those fish adds up to a specified limit), a prohibition on discards, and larger hook sizes.

Market/Economic Issues

One recreational fishing advisor from New Jersey said the continued restrictions on black sea bass hurt the economy. For example, they impact support businesses such as fuel dealers in addition to impacting fishermen.

Commercial Fishery Issues

One advisor speaking from the recreational fishing perspective said management should reward fisheries with lower bycatch. He noted that a previous analysis, not presented during this meeting, showed an increasing proportion of commercial landings from trawl gear. He noted that trawl gear has much higher levels of dead discards than pots/traps.

Another recreational fishing advisor recommended consideration of separate quotas for trawl and pot/trap commercial fisheries.

General Comments on AP Participation and Input

The topic of attendance came up and it was noted that about 12 out of 24 Council AP members were present and 3 out of 31 were present for the Commission. This generated some discussion about AP participation and the process of seeking advisor input.

One advisor asked for additional guidance on what information from advisors would be the most useful to contribute to the decision-making process. This advisor thought the input is solicited late in the process, and also expressed concern that the new data expected after this meeting negates the AP input almost automatically. He suggested thinking about how to get advisor input into the system earlier, for example, by using an online form that advisors could respond to earlier in the year. Then, during this meeting to develop Fishery Performance Reports, advisors would have more ideas and information to react to provided by other advisors. This advisor would like to find ways to encourage advisors to talk more and engage in more meaningful discussions.

Several advisors supported occasional in-person AP meetings, while acknowledging that not everyone would be able to travel to these meetings. In-person meetings would likely get better participation if held earlier in the year, in late winter or spring. For webinar meetings, evenings may work better for many advisors. One AP member also suggested breaking the species up into separate meetings to potentially give more people an opportunity to participate and to lower the time commitment for an individual meeting.

One advisor suggested that providing more information about each advisors' background, for example on the website, would be helpful for increased awareness about where other advisors are coming from and provide information to the public on who may be helpful to call if they have feedback on the topic. Others suggested that casual pre-meeting calls or email threads between individual advisors can be helpful for preparing for the meetings.

Public Comments

One individual who is on other Council Advisory Panels, but not this Advisory Panel, noted that the tables shown in the presentation suggest a pattern of increasing commercial landings and stable recreational landings, with increasing overall dead catch for all three species. He said this trend needs to be addressed. He noted that there were major revisions to the recreational fishing data to address previous issues which were identified as fatal flaws; however, the new data is not much of an improvement. He thought a closer look at the estimation methodology is warranted. Perhaps effort is over-estimated.

This individual also noted that although the staff presentations showed evidence of poor recruitment in some recent years, the number of juvenile summer flounder and black sea bass in estuaries has not declined, suggesting that preservation of female fish has not been an issue. Survival of juveniles in estuaries should be given greater attention. For example, research could focus on oxygen levels, prey availability, and other factors influencing survival in estuaries. This individual also agreed with previous comments about catch being reflective of stock status. He noted that the recreational summer flounder fishery is not doing well this year and the recreational measures should be re-evaluated, for example to allow a longer open season under lower possession limits.

Additional AP Comments Provided Outside of the Meeting

Steve Witthuhn

Comments provided to Council staff over the phone in June and July 2023.

- **General comments**
 - The June 2023 Advisory Panel meeting took place during a busy time of year for fishing.
 - The Marine Recreational Information Program (MRIP) data are flawed and inaccurate.
 - Recreational fishermen are so frustrated with the restrictive regulations that they don't care anymore and are not complying with the regulations. This is especially true for black sea bass given the stock is so abundant.
 - Recreational anglers are concerned that discards will count against them.
 - Fishing reports sometimes embellish the amount of fish caught. This is problematic and could have unintended consequences if it's used against fishermen.
 - Regulations should be more consistent across states. For example, Connecticut and the north shore of Long Island should be treated as a region with the same regulations. Summer flounder and tautog have the same measures for New York and Connecticut in Long Island Sound. The same approach should be used for black sea bass and other species as well.
 - The recreational fishery is not catching many summer flounder because biomass is low. Those regulations remain unchanged. In contrast, black sea bass catch is high because that stock is more than double the target level. Those regulations are being restricted. This makes it feel like the recreational fishery is being penalized for catching more and rewarded for catching less.

- Fuel prices are still decent.
- Young people aren't getting involved in the fisheries and they aren't getting involved in the management process, including on the Advisory Panels.
- With climate change, we are seeing more southern species such as cobia and triggerfish. Triggerfish are almost a targeted species now.
- **For-hire sector**
 - The overall attitude in the for-hire sector has changed. People are very frustrated and fed up with management. This increases non-compliance.
 - The for-hire regulations need to allow customers to take home some fish. Customers are catching lots of fish, but aren't able to take any home due to the size limits.
 - A full day charter costs a lot of money. Customers want to have a good day on the water catching fish and they also want something to take home.
 - If you see a party boat that's always full of people, it's because they are taking something home.
 - Management should consider for-hire boat limits. For example, a limit of three striped bass per charter boat would allow each of the six customers to take home one fillet.
 - I'm not doing many for-hire trips yet because the black sea bass season isn't open yet. We can't catch as many striped bass under the new regulations. Fluke availability is down, and people don't want to eat bluefish.
 - Another advisor has suggested a cumulative length limit as a way to reduce discards. That has some similarities to what we are already doing for striped bass and black sea bass. When we get our limit, we stop fishing for that species and move on to something else.
- **Black sea bass**
 - Recreational fishermen in New York are very upset by the increase in the black sea bass minimum fish size to 16.5 inches. This will result in very high discards and less fish to take home. The minimum size used to be 14 inches. How is management doing a good job if the minimum size keeps increasing?
 - The 16.5 inch minimum size and the late start to the recreational black sea bass season will lead to increased non-compliance. We're already seeing lots of bad behavior. People not waiting for black sea bass to open. The fluke season started out bad. The only thing we're catching is black sea bass, so people are keeping them so their customers can take something home. This is not a good way to run a business.
 - It is frustrating that the for-hire sector wasn't able to keep a 16 inch minimum size this year, but we were told we'd have to open in July to allow that.
 - In the past, black sea bass has bailed me out. Now the for-hire season in New York doesn't open until June 23.
 - The three fish recreational possession limit at the start of the season in New York is something, but it is frustrating that the minimum size had to increase to 16.5 inches to allow this.
 - It is frustrating that New York has more restrictive recreational measures than neighboring states. New Jersey has a much smaller minimum size than New York and has four different seasons throughout the year. How was New Jersey able to get this through? Connecticut has a 16 inch minimum size. People are aware of this and are frustrated. Neighboring states should have the same measures.

- The black sea bass commercial season opens way before the recreational season. Recreational fishermen complain that all the commercial pinhookers catch all the black sea bass. The commercial sector gets a better price for big fish. The recreational fishermen are concerned that they'll only get the small throw backs, which are below the recreational minimum size of 16.5 inches.
- In the commercial fishery, jumbo black sea bass (3-4 pounds) go for the highest prices, but they are hard to find.
- It is disappointing that the black sea bass research track assessment peer review has been delayed. Do we need to dedicate more funding to this assessment to help it get done well and on time?
- **Summer flounder**
 - This is one of the worst years so far for fluke.
 - I heard there was a good body of fluke that moved north to Massachusetts before they could be caught off New York. My contacts in the commercial fishery are also saying the market is getting fluke from Massachusetts. I've heard they are catching shorts in Massachusetts and we're not getting shorts in New York.
 - The price for fluke in New York was higher this year, but no one was catching them.
- **Scup**
 - The commercial ex-vessel price for scup has decreased.
- **Bluefish**
 - There's a very large body of bluefish off Montauk. They are feeding on squid, herring, anchovy, and sand eels. It's surprising that we had such a good sand eel hatch with the mild winter.
 - This is the best start to a bluefish season I've ever seen. There were 8-12 pound bluefish in May. That keeps us busy. Tackle shops like that. Bluefish bite off tackle.
 - How old is a 10 pound bluefish? What size are the spawners that we want to save?
 - There used to be snapper derbies for bluefish. There haven't been enough snappers recently for those derbies to come back.
 - The bag limit changes for bluefish have been helpful for the for-hire sector.
 - The bluefish price is down to \$0.40 per pound, which is extremely low. It should be more like \$1.00 per pound. Shipping a box of bluefish costs more than the price we are paid for the fish in the box.
 - The low price is contributing to landings falling below the quota.
 - The commercial possession limit for bluefish in New York should not have been increased from 500 to 1,500 pounds. It should have stayed lower to help improve the price.
- **Striped bass**
 - The additional black sea bass restrictions are happening at the same time as the emergency ruling for striped bass, which changed the slot limit to 28-31 inches. This is a big blow to the recreational fishery. It will also increase discards.
 - It is frustrating that management did not act more proactively to prevent the need for emergency striped bass measures. Managers should have foreseen this situation with the 2015 year class. There had been a downward trend for four years and then the MRIP estimate for 2022 showed extremely high harvest. It's not an emergency, it's a failure of the whole system and the recreational fishing industry has to pay the price.

- All states should have similar measures to help rebuild the stock. It does not make sense for one state to keep their trophy fish when others could not. Trophy fish should only be allowed if there's an upward trend in the stock.
- The fishery should be closed during spawning to help with rebuilding.
- It would have been better to keep the for-hire sector at their previous slot limit and further restrict the private recreational sector given that they are responsible for most of the discard mortality.
- A few states opened their commercial striped bass fishery, which caused a decrease in the price in New York.
- There have been more striped bass in federal waters recently.
- Night fishing increases the catch of large fish. Even with catch and release, there are still concerns about discard mortality.
- Restrictions could be considered to prohibit taking big fish out of the water, as is done for tarpon. If people want to take a picture before they release the fish, they should keep the fish in the water.

Bonnie Brady

Comments provided to Council staff in June 2023.

- The biggest issue last year were horrible prices.

Joan Berko

From: fishthewizard (null)

To: Beaty, Julia

Subject: AP meeting

Date: Wednesday, June 21, 2023 4:51:28 PM

Hi Julia:

I had trouble getting sound with my Mac so used my Ipad. Logged in as JB. Last years BSB prices were low, mostly below \$1 for mediums. The average price of \$2.60 sounds high. Fuel averaged well over \$4.

Joan Berko

Sent from my iPad

James Fletcher

From: [James Fletcher](#)
To: [Beaty, Julia](#); [Hart, Hannah](#); [Andrew Petersen](#)
Subject: Re: INFORMATION FOR 21 DISCUSSION
Date: Thursday, June 22, 2023 5:27:54 PM

Because my comment could not be included::: I Believe BOFFFF (BIG OLD FAT FECUND FEMALE FISH "SCIENCE" IS IGNORED FOR ALL THREE SPECIES! Management & NMF Science by allowing by catch has INTENTIONALLY destroyed the genetic superior breeding fish. A policy for recreational KEEP WHAT YOU CATCH with hook size regulations would have allowed the deprived shore side recreational fishers food to take home & enjoyment from recreational fishing.

A policy / regulatory consideration for total length retention SHOULD BE A PART OF THE A.P. REPORT !

also cell phone for recreational **MUST BE IMPLEMENTED! BLUEFIN DATA HAS SYSTEM FOR CELL PHONE REPORTING! PLEASE NOTE IN REPORT!**

CALL BLUFFIN AT (225-407-9192 TO CONFIRM APPLICATION IS AVAILABLE
PLEASE NOTE IN REPORT!

On 6/22/2023 2:46 PM, Beaty, Julia wrote:

Hi James,

I reached out to my coworker Tori for help with this question. I am not sure if you've interacted with Tori much yet. She has a strong background in spatial analysis. See below for her calculations of rough estimates of the area covered by several surveys.

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

From: Kentner, Tori <tkentner@mafmc.org>
Sent: Wednesday, June 21, 2023 5:17 PM **To:**
Beaty, Julia <jbeaty@mafmc.org>
Cc: Didden, Jason <jdidden@mafmc.org>; Moore, Christopher <cmoore@mafmc.org>
Subject: Re: INFORMATION FOR 21 DISCUSSION

Hi Julia,

I don't have shapefiles for the NEAMAP strata or any of the state surveys on hand. I'm not even sure if strata shapefiles exist for most surveys. Despite extensive searching

online I couldn't come up with any official resources. As a solution I applied a method called concave hull analysis to draw polygons around the survey points for each trawl, creating an initial shapefile. From this, I've estimated the areas in square nautical miles.

Just want to stress this is a very rough estimate and for a more precise picture I'd recommend reaching out to NEAMAP or the state agencies directly. I'm actually planning on doing this for the EFH analysis, but I probably won't get responses for at least a few weeks/months. I can update this list at that time if there is still interest.

Tori

Survey	NM SQ
NEAMAP Bottom Trawl	3,500
Maine-New Hampshire Inshore Trawl	5,200
New Jersey Ocean Stock Assessment	1,900
Connecticut Long Island Sound Trawl	750
Massachusetts Bottom Trawl	1,700
Rhode Island Narragansett Bay Trawl	225

-----Original Message-----

From: James Fletcher <unfa34@gmail.com>

Sent: Tuesday, June 20, 2023 10:56 AM

To: Beaty, Julia <jbeaty@mafmc.org>; Moore, Christopher <cmoore@mafmc.org>; Didden, Jason <jdidden@mafmc.org>

Subject: INFORMATION FOR 21 DISCUSSION

I have following (ATTACHED sq MILE ESTIMATE OF NEFSC TRAWL SURVEY sq miles / acres for National Marine Fisheries survey.

Would you attempt to acquire area of NEMAP survey? Then attempt gain State water areas not surveyed?

THE REASON FOR THOUGHT! OUR 11 MILLION TO 18 MILLION ACL OR ANY NUMBER USED **** WOULD ONLY BE A PERCENTAGE OF POUNDS OF FISH PER ACRE.

Knowing if I fish an acre of bottom will catch many times what survey shows. NEED DISCUSSION OF WHAT SCIENCE WE ARE USING.

PLEASE ACQUIRE AREA COVER BY NEMAP. AND STATE WATERS NOT COVERED BY ANY SURVEY, THANK YOU;

Carl Benson

From: flukeman@aol.com

Sent: Monday, June 26, 2023 12:42 PM

To: Beaty, Julia

Cc: Kiley Dancy; Hart, Hannah; tbauer@asmfc.org; Chelsea Tuohy; Mark Grant

Subject: Re: Briefing materials for June 21 webinar meeting

Attachments: FSB_AP_21June2023_Agenda.pdf; Fluke AP FPR Info Doc_2023.pdf;

Scup_info_doc_2023.pdf;

BSB_fishery_info_doc_2023.pdf

Thanks for the presentation. I had mic problems with online and phone call in. Convenient that James and I have the problems. (LOL)

The best suggestion I heard was to create a site where advisors could respond to threads that you started. Maybe advisors could also add threads that they wish to discuss.

A comment that could change my priority concerned size of fluke recruitment vs size of fish reaching one year of age. Very interesting comment.

Which method of rebuilding stock is correct? Striped Bass-protect spawning females vs Summer Flounder - harvest females.

Revisit commercial discards (14" was 13"). Commercial discards are counted against total harvest becoming scavenger food vs harvest those fish, becoming people food. These fish would fit well into ethnic markets as whole fish to compete with imports (tilapia, etc).

Thanks

Carl Benson



Summer Flounder Fishery Information Document

June 2023

This document provides a brief overview of the biology, stock condition, management system, and fishery performance for summer flounder (*Paralichthys dentatus*), with an emphasis on 2022. Data sources include unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), and permit data, as well as Marine Recreational Information Program (MRIP) data¹ and stock assessment information. All 2022 data should be considered preliminary. For more resources on summer flounder management, including previous Fishery Information Documents, please visit <http://www.mafmc.org/sf-s-bsb>.

Key Facts:

- Current stock status is based on a 2021 management track stock assessment, which found that in 2019, summer flounder was not overfished and overfishing was not occurring. A new management track assessment will be peer reviewed in late June 2023.
- Recruitment for summer flounder was generally below-average from 2011-2017. Recruitment in 2018 was above average and the largest year class estimated since 2009; however, 2019 recruitment was estimated to be below average. Updated recruitment estimates for 2020-2022 will be provided in the 2023 management track assessment.
- 2022 recreational summer flounder harvest was estimated at 8.83 million pounds, about 85% of the harvest limit of 10.36 million pounds. This is a 29% increase from the 2021 recreational harvest estimate of 6.82 million pounds, which was the lowest estimate since 1989.
- Commercial landings in 2022 (12.47 million pounds; 80% of commercial quota) increased by about 18% from 2021 landings (10.56 million pounds; 85% of commercial quota).
- Average commercial ex-vessel price decreased from \$3.10 in 2021 to \$2.44 in 2022. Average price per pound has decreased in recent years from its peak in 2017 (\$4.98 per pound in 2022 dollars).

¹ 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). The revised estimates of catch and landings are higher than the previous estimates for shore and private boat modes. Most recreational estimates in this document reflect revised MRIP estimates except where otherwise noted.

Basic Biology

Summer flounder spawn during the fall and winter over the open ocean areas of the continental shelf. From October to May, larvae and postlarvae migrate inshore, entering coastal and estuarine nursery areas. Juveniles are distributed inshore and in many estuaries throughout the range of the species during spring, summer, and fall. Adult summer flounder exhibit strong seasonal inshore-offshore movements, normally inhabiting shallow coastal and estuarine waters during the warmer months of the year and remaining offshore during the colder months.

Summer flounder habitat includes pelagic waters, demersal waters, saltmarsh creeks, seagrass beds, mudflats, and open bay areas from the Gulf of Maine through North Carolina. Summer flounder are opportunistic feeders; their prey includes a variety of fish and crustaceans. While the natural predators of adult summer flounder are not fully documented, larger predators (e.g., large sharks, rays, and monkfish) probably include summer flounder in their diets.

Spawning occurs during autumn and early winter, and the larvae are transported toward coastal areas by prevailing water currents. Development of post larvae and juveniles occurs primarily within bays and estuarine areas (Packer et al. 1999). Most fish are sexually mature by age 2. The largest fish are females, which can attain lengths over 90 cm (36 in) and weights up to 11.8 kg (26 lb). The Northeast Fisheries Science Center (NEFSC) commercial fishery sampling in 2018 observed the oldest summer flounder collected to date, a 57 cm (22.4 in) fish (likely a male) estimated to be age 20. Also sampled were two age 17 fish, at 52 cm (20.5 in; likely a male) and at 72 cm (28.3 in; likely a female). Two large (likely female) fish at 80 and 82 cm (31.5 and 32.3 in) were both estimated to be age 9, from the 2009 year class (the 6th largest of the 36 year modeled time series). These samples indicate that increased survival of summer flounder over the last two decades has allowed fish of both sexes to grow to the oldest ages estimated to date (NEFSC 2019).

Status of the Stock

The information below is based on the most recent stock assessment information available as of the completion of this document. An updated management track stock assessment will be available in late June/July 2023.

In June 2021, the NEFSC provided a management track assessment (NEFSC 2021) for summer flounder with data through 2019, providing estimates of spawning stock biomass (SSB) and fishing mortality (F). Given data gaps for 2020 related to COVID-19 and the time required to address those gaps, 2020 data could not be incorporated into the 2021 management track assessment. Assessment results indicate that the summer flounder stock was not overfished and overfishing was not occurring in 2019. SSB has generally decreased since 2003, and in 2019 was estimated to be about 86% of the biomass target reference point and about 72% above the overfished threshold which is equivalent to ½ of the biomass target (Table 1; Figure 1). Fishing mortality in 2019 was estimated to be 19% below the fishing mortality threshold reference point (Table 1; Figure 2).

Average recruitment from 1982 to 2019 was estimated at 53 million fish at age 0. Recruitment of juvenile summer flounder was below-average from 2011-2017, ranging from 31 to 45 million fish and averaging 36 million fish. The driving factors behind this period of below average recruitment have not been identified. The 2018 year class is above average at an estimated 61 million fish, which is largest recruitment estimate since 2009, while the 2019 year class is below average at 49 million fish.

In 2022, the NEFSC provided a data update which included 2020 and 2021 landings information as well as NEFSC trawl survey data from 2021 through spring 2022 (2020-2021 dead discard estimates were not available at the time and no NEFSC trawl surveys were conducted in 2020 due to COVID). The NEFSC spring survey index of summer flounder stock biomass decreased by 41% from 2019 to 2022; the fall index increased by 6% from 2019 to 2021 (NEFSC 2022).

Table 1: Biomass and fishing mortality rate reference points and terminal year estimates for summer flounder from the 2021 management track assessment (NEFSC 2021).

	Spawning stock biomass	Fishing mortality rate (F)
Terminal year estimate (2019)	104.49 million lb (47,397 mt)	0.340
Target	121.73 mil lb (55,217 mt)	N/A
Threshold	60.87 million lb (27,609 mt)	0.422
Status	Not overfished	Not overfishing

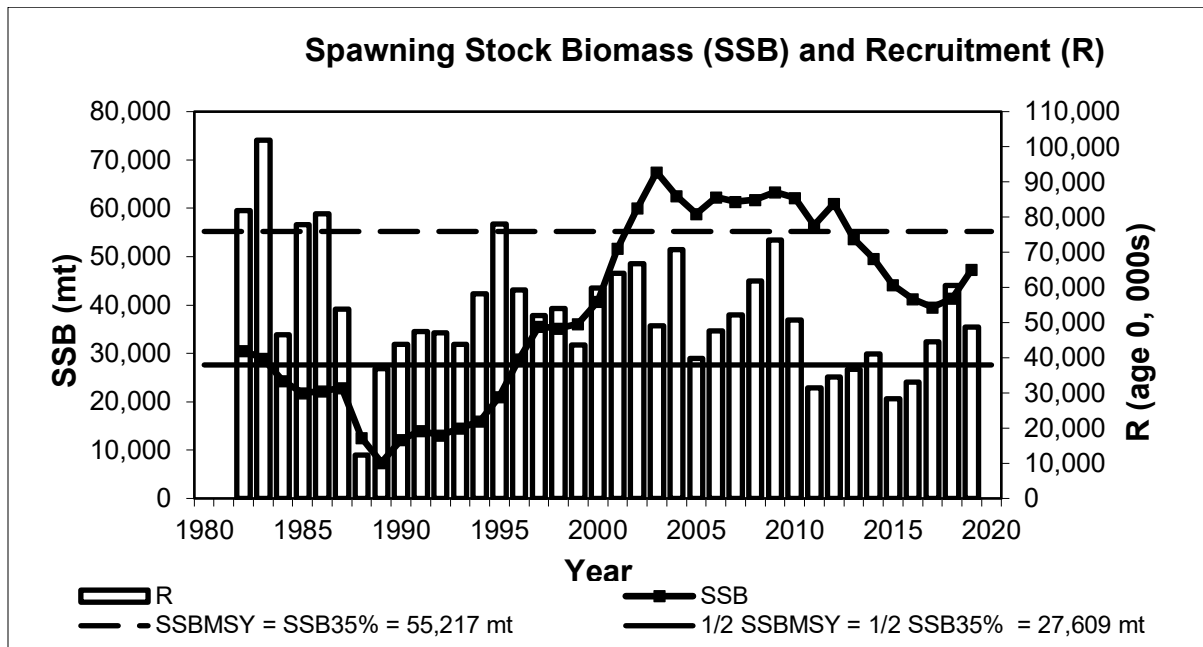


Figure 1: Summer flounder spawning stock biomass (SSB; solid line with square markers) and recruitment at age 0 (R; vertical bars), 1982-2019. The horizontal dashed line is the target biomass level. The horizontal solid line is the threshold biomass level defining an overfished condition. Source: NEFSC 2021.

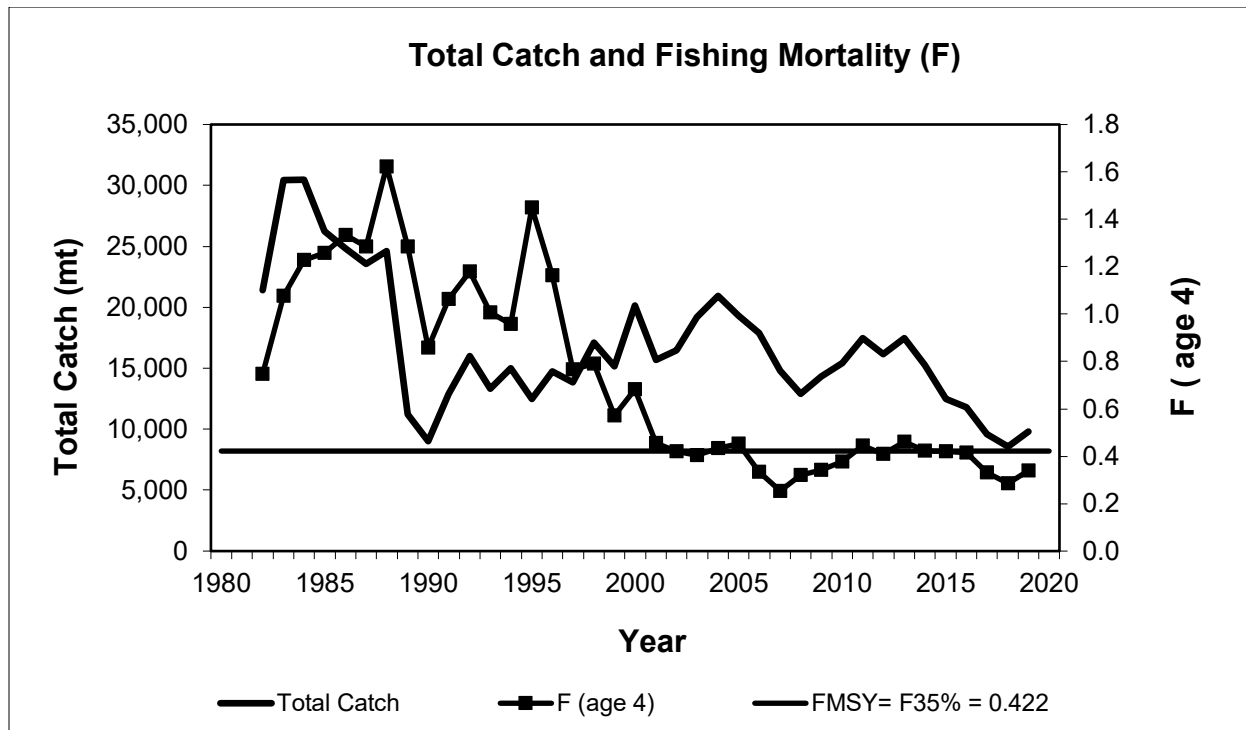


Figure 2: Total fishery catch (metric tons; mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder, 1982-2019. The horizontal solid line is the fishing mortality reference point. When F exceeds this threshold, overfishing is occurring. Source: NEFSC 2021.

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission) work cooperatively to develop fishery regulations for summer flounder off the east coast of the United States. The Council and Commission work in conjunction with NMFS, which serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch is taken from both state (0-3 miles offshore) and federal waters (3-200 miles offshore, also known as the Exclusive Economic Zone, or EEZ).

The joint Fishery Management Plan (FMP) for summer flounder became effective in 1988 and established the management unit for summer flounder as U.S. waters from the southern border of North Carolina northward to the U.S.-Canadian border. The FMP also established measures to ensure effective management of summer flounder fisheries, which currently include catch and landings limits, commercial quotas, recreational harvest limits (RHLs), minimum size limits, gear regulations, permit requirements, and other provisions as prescribed by the FMP. The Summer Flounder FMP, including subsequent Amendments and Frameworks, are available on the Council website at: <http://www.mafmc.org/fisheries/fmp/sf-s-bsb>.

There are large commercial and recreational fisheries for summer flounder. These fisheries are managed primarily using output controls (catch and landings limits). The Council’s Scientific and Statistical Committee (SSC) recommends annual Acceptable Biological Catch (ABC) levels for summer flounder. The ABC is divided into commercial and recreational Annual Catch Limits (ACLs), which include both allowable landings and expected dead discards. Through 2022, 60% of the total allowable landings (calculated by subtracting total expected dead discards from the ABC) were allocated to the commercial fishery as a commercial quota and 40% was allocated to the recreational fishery as an RHL. Starting with 2023, the ABC is now allocated 55% to the commercial fishery as a commercial ACL and 45% to the recreational fishery as a recreational ACL.²

Fishery Catch Summary

Table 2 shows summer flounder total catch and catch limits from 2014 through 2023, as well as the overfishing limit (OFL) from which the ABC is derived. The ABC is set less than or equal to the OFL to account for scientific uncertainty. The OFL for summer flounder has not been exceeded in the last ten years (based on total dead catch estimates that use the prior time series of MRIP through 2018, and corresponding OFLs based on assessments that did not account for the revised MRIP data). The summer flounder ABC has not been exceeded since 2017 (Table 2).

Table 2: Total summer flounder dead catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC. All values are in millions of pounds. Total dead catch calculations use “old” MRIP data through 2018, and “new” MRIP data for 2019-2022.

Year	Total dead catch ^a	OFL	OFL overage/underage	ABC	ABC overage/underage
2014	22.27	26.76	-17%	21.94	+2%
2015	18.22	27.06	-33%	22.57	-19%
2016	17.16	18.06	-5%	16.26	+6%
2017	12.00	16.76	-28%	11.30	+6%
2018	12.65	18.69	-32%	13.23	-4%
2019	21.63	30.00	-28%	25.03	-14%
2020	24.27	30.94	-22%	25.03	-3%
2021	21.50	31.67	-32%	27.11	-21%
2022	25.55	36.28	-30%	33.12	-23%
2023	--	34.98	--	33.12	--

^a See Table 3 and Table 10 for the commercial and recreational data contributing to the total catch estimates.

² For more information on these allocation revisions, see the fact sheet at: <https://www.mafmc.org/s/SFSBSB-Allocation-FAQs.pdf>.

Figure 3 shows commercial and recreational landings and dead discards from 1993 through 2022. Total (commercial and recreational combined) summer flounder catch during this time period peaked in 2004, generally declining to a low in 2018, with a slight increase since then.

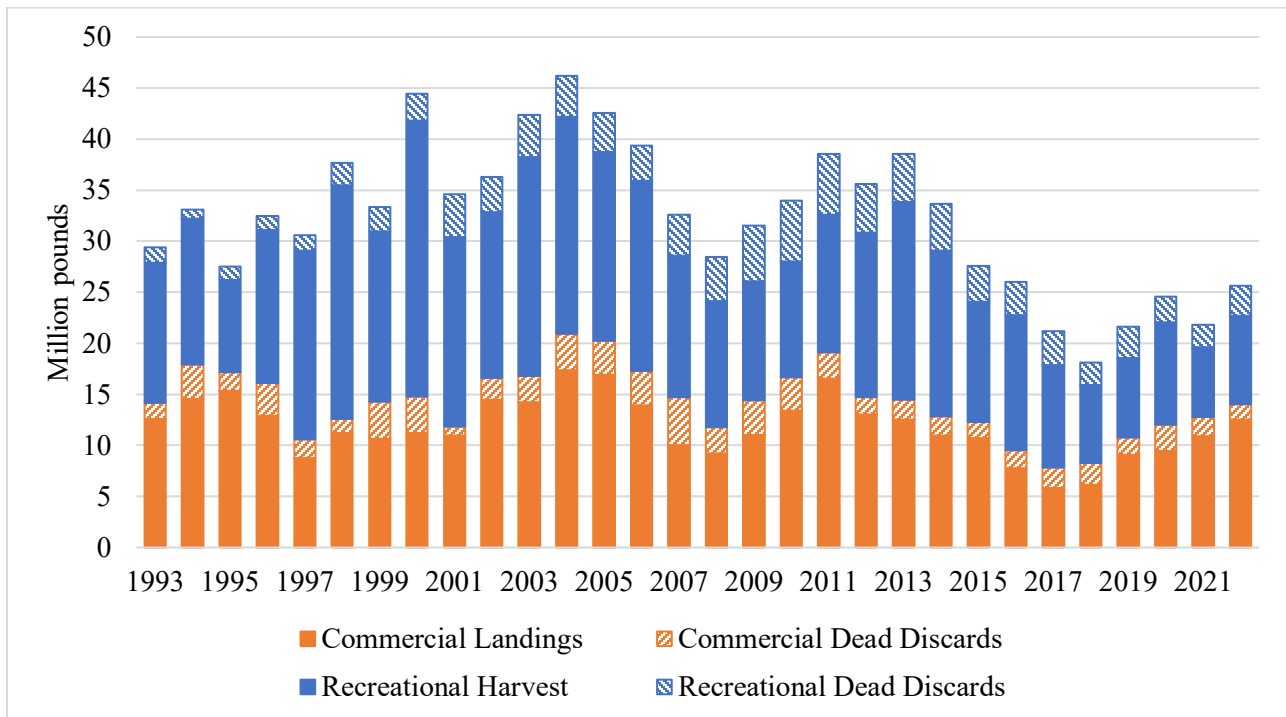


Figure 3: Commercial and recreational summer flounder landings and dead discards in millions of pounds, Maine-North Carolina, 1993-2022, based on federal dealer data, MRIP data, and NEFSC provided discard data.

Commercial Fishery

Commercial landings of summer flounder peaked in 1984 at 37.77 million pounds and reached a low of 5.87 million pounds in 2017 (Figure 3). In 2022, dealer data indicate that commercial fishermen from Maine through North Carolina landed 12.47 million pounds of summer flounder, about 82% of the commercial quota (15.53 million pounds). Commercial dead catch has not exceeded the commercial ACL since 2018. Where commercial ACL overages have occurred, they are generally caused by higher-than-expected dead discards, as commercial fishery landings for summer flounder are typically well controlled to the commercial quota (Table 3).

Table 3: Summer flounder commercial landings, dead discards, and dead catch compared to the commercial quota and commercial ACL, 2014-2023. All values are in millions of pounds.

Year	Com. landings ^a	Com. quota	Quota overage/ underage	Com. dead discards ^a	Com. dead catch ^a	ACL	ACL overage/ underage
2014	11.00	10.51 ^b	5%	1.83	12.83	12.87	0%
2015	10.71	11.07	-3%	1.55	12.26	13.34	-8%
2016	7.80	8.12	-4%	1.7	9.5	9.43	1%
2017	5.87	5.66	4%	2.0	7.87	6.57	20%
2018	6.17	6.63	-7%	2.16	8.33	7.70	8%
2019	9.06	10.98	-17%	1.73	10.79	13.53	-20%
2020	9.11	11.53	-21%	2.56	11.67	13.53	-14%
2021	10.56	12.49	-15%	1.92	12.48	14.63	-15%
2022	12.47	15.53	-20%	1.5	13.97	18.48	-24%
2023	--	15.27	--	--	--	18.21	--

^a Commercial landings based on NMFS dealer data; commercial dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

^b The 2014 commercial quota was adjusted for Research Set Aside (RSA). Quotas for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014. Commercial quotas also reflect deductions from prior year landings overages and discard-based Accountability Measures.

The commercial quota is divided among the states based on the allocation percentages specified in the FMP. Each state sets measures to achieve their state-specific commercial quotas. Two or more states may transfer or combine their summer flounder commercial quota under mutual agreement and with the approval of the NMFS Regional Administrator. The commercial allocations to the states were modified via Amendment 21, which became effective on January 1, 2021. This allocation system specifies that coastwide commercial quota up to 9.55 million pounds will be distributed according to the baseline allocations specified in Table 4 below (based on the pre-2021 state allocation percentages). When the coastwide quota exceeds 9.55 million pounds, the first 9.55 million pounds will be allocated according to the baseline percentages, but the *additional* quota amount beyond this trigger will be distributed by equal shares to all states except Maine, Delaware, and New Hampshire, which would split 1% of the additional quota (Table 4). The total percentage allocated annually to each state is dependent on how much additional quota beyond 9.55 million pounds, if any, is available in any given year. This allocation system is designed to provide for more equitable distribution of quota when stock biomass is higher, while also considering the historic importance of the fishery to each state.

Table 4: Allocation of summer flounder commercial quota to the states.

State	Total state commercial quota allocation = baseline quota allocation + additional quota allocation	
	Allocation of baseline quota ≤ 9.55 mil lb	Allocation of additional quota beyond 9.55 mil lb
ME	0.04756%	0.333%
NH	0.00046%	0.333%
MA	6.82046%	12.375%
RI	15.68298%	12.375%
CT	2.25708%	12.375%
NY	7.64699%	12.375%
NJ	16.72499%	12.375%
DE	0.01779%	0.333%
MD	2.03910%	12.375%
VA	21.31676%	12.375%
NC	27.44584%	12.375%
Total	100%	100%

For 1994 through 2022, NMFS dealer data indicate that summer flounder total ex-vessel revenue from Maine to North Carolina ranged from a low of \$24.84 million in 1996 to a high of \$40.90 million in 2005 (values adjusted to 2022 dollars to account for inflation). The mean price per pound ranged from a low of \$2.11 in 2002 to a high of \$4.98 in 2017 (both values in 2022 dollars). In 2022, 12.46 million pounds of summer flounder were landed generating \$30.45 million in total ex-vessel revenue (an average of \$2.44 per pound; Figure 4).

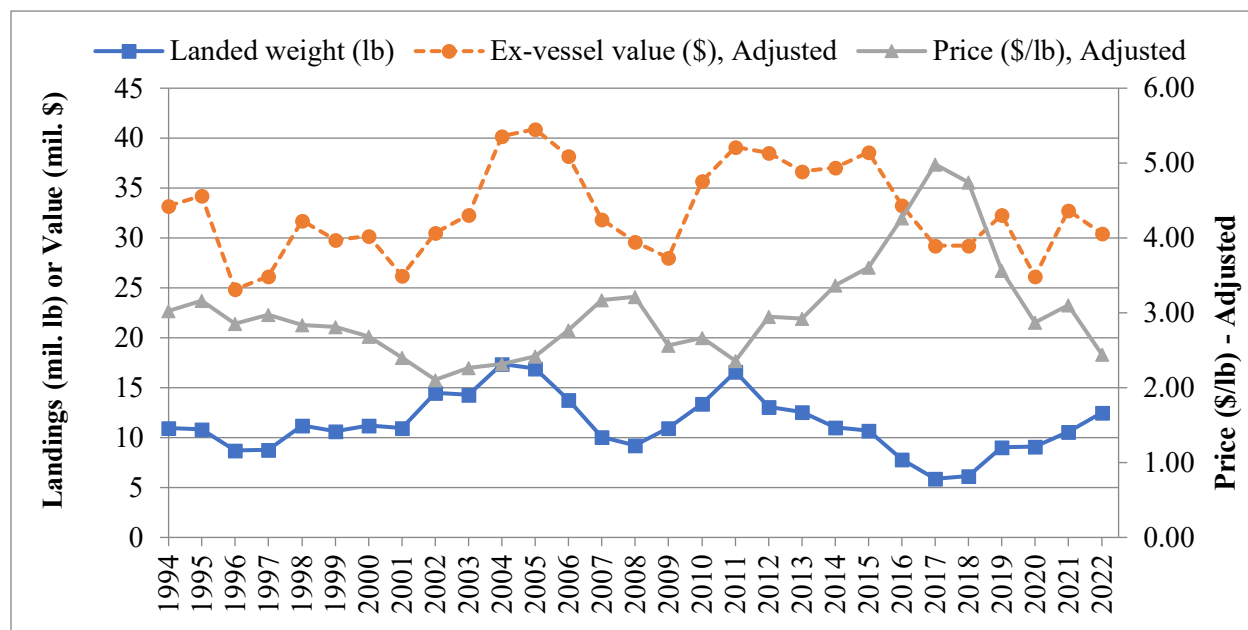


Figure 4: Landings, ex-vessel value, and price per pound for summer flounder, Maine through North Carolina, 1994-2022. Ex-vessel value and price are adjusted to real 2022 dollars using the Gross Domestic Product Price Deflator (GDPDEF).

VTR data indicate that 99% of summer flounder landings in 2021 were taken by bottom otter trawls. Current regulations require a 14-inch total length minimum fish size in the commercial fishery. Trawl nets are required to have 5.5-inch diamond or 6-inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder (i.e., 200 lb from November 1-April 30 and 100 lb from May 1-October 31).

According to federal VTR data, statistical areas 537 and 616 were responsible for the highest percentage of commercial summer flounder catch in 2022 (29% and 22% respectively; Table 5; Figure 5). Statistical areas 613 and 539 had the highest number of trips that caught summer flounder (1,653 and 1,626 trips, respectively; Table 5).

Over 167 federally permitted dealers from Maine through North Carolina bought summer flounder in 2022. More dealers from New York bought summer flounder than any other state (Table 6). All dealers combined bought approximately \$30.45 million worth of summer flounder in 2022.

Since 1993, a moratorium permit has been required to fish commercially for summer flounder in federal waters. In 2022, 718 vessels held such permits.

Federal dealer data indicate that at least 100,000 pounds of summer flounder were landed by commercial fishermen in 20 ports in 8 states in 2022. These ports accounted for 93% of all 2022 commercial summer flounder landings. Point Judith, RI and Pt. Pleasant, NJ were the leading ports in 2022 in pounds of summer flounder landed, while Point Judith, RI was the leading port in number of vessels landing summer flounder (Table 7). Detailed community profiles developed by the Northeast Fisheries Science Center’s Social Science Branch can be found at www.mafmc.org/communities/.

Table 5: Statistical areas that accounted for at least 5% of the total summer flounder catch in 2022, with associated number of trips, from federal VTR data. Federal VTR data do not capture landings by vessels only permitted to fish in state waters.

Statistical Area	Percent of 2022 Commercial Summer Flounder Catch	Number of Trips
537	29%	1,461
616	22%	508
613	14%	1,653
612	7%	758
539	6%	1,626
615	5%	393
622	5%	134

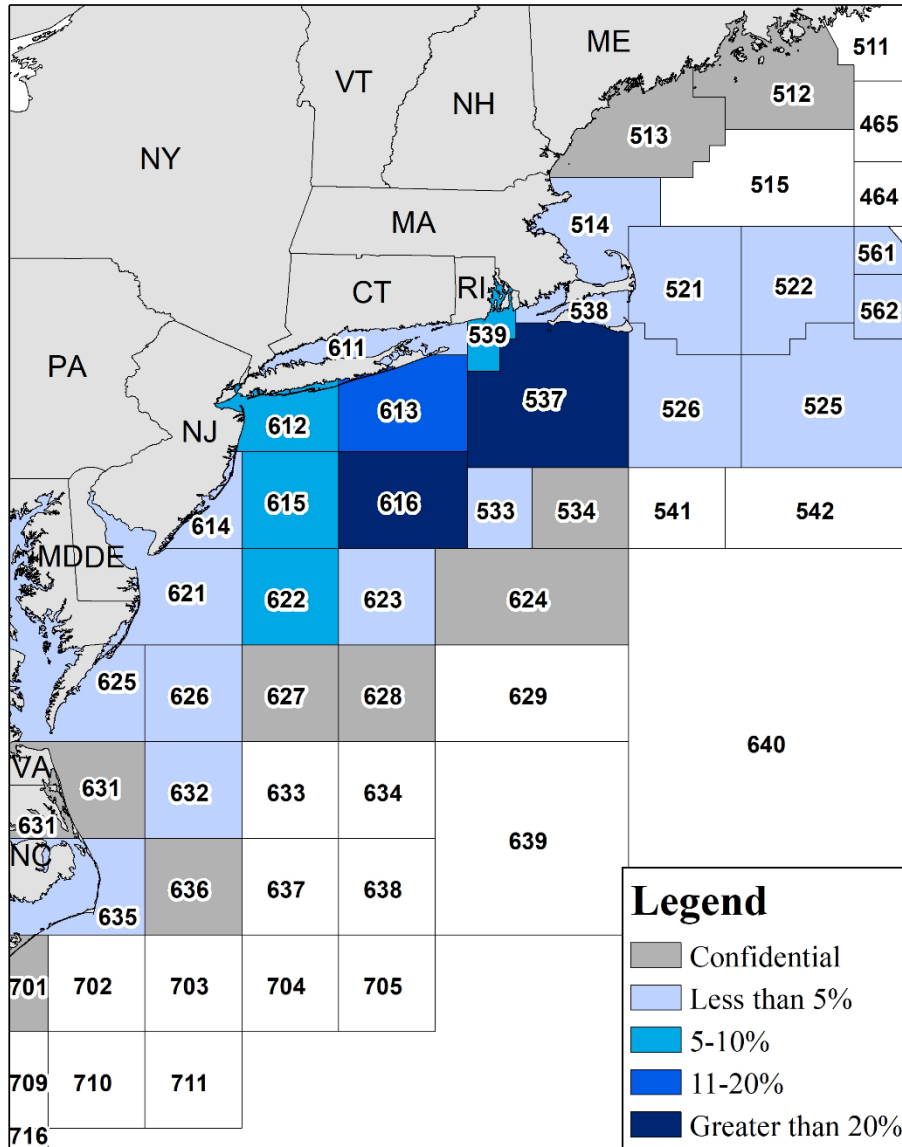


Figure 5: Proportion of commercial summer flounder catch (all vessel reported landings and discards) by NMFS statistical area in 2022 based on federal VTR data. Statistical areas marked “confidential” are associated with fewer than three vessels and/or dealers. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

Table 6: Number of dealers per state which reported purchases of summer flounder in 2022. C = Confidential.

State	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
# of Dealers	0	30	24	14	46	26	C	3	11	13

Table 7: Ports reporting at least 100,000 pounds of commercial summer flounder landings in 2022, based on federal dealer data.

Port	Commercial summer flounder landings (lb)	% of total	Number of vessels
POINT JUDITH, RI	1,921,868	15	107
PT. PLEASANT, NJ	1,475,985	12	39
BEAUFORT, NC	1,285,732	10	28
NEWPORT NEWS, VA	1,133,724	9	32
HAMPTON, VA	854,395	7	34
MONTAUK, NY	600,918	5	52
CAPE MAY, NJ	553,444	4	34
ENGELHARD, NC	535,408	4	6
NEW BEDFORD, MA	529,055	4	54
STONINGTON, CT	446,181	4	17
HAMPTON BAYS, NY	388,412	3	25
OCEAN CITY, MD	336,852	3	15
EAST HAVEN, CT	300,663	2	7
SHINNECOCK, NY	222,777	2	13
BELFORD, NJ	218,201	2	13
WANCHESE, NC	206,655	2	5
ORIENTAL, NC	202,688	2	4
CHINCOTEAGUE, VA	141,968	1	8
BARNEGAT LIGHT, NJ	127,249	1	13
WOODS HOLE, MA	102,589	1	8

The top non-target species in the commercial summer flounder fishery were identified based on raw data from Northeast Fisheries Observer Program (NEFOP) observed trips from 2017-2022 where summer flounder made up at least 75% of the landings by weight. Using this definition of a directed trip, the most common non-target species in the summer flounder fishery include little skate, Northern sea robin, and winter skate (Table 8).

Table 8. Percent of non-target species caught in observed trawls where summer flounder made up at least 75% of the observed landings, 2017-2022. Only those non-target species comprising at least 2% of the aggregate non-target catch are listed.

Species	% of total catch on summer flounder observed directed trips, 2017-2022 ^a
SKATE, LITTLE	19.5%
SEA ROBIN, NORTHERN	6.4%
SKATE, WINTER (BIG)	6.3%
SKATE, CLEARNOSE	4.6%
DOGFISH, SPINY	4.5%
MONKFISH (GOOSEFISH)	2.7%
SCUP	2.6%
SKATE, BARNDOOR	2.5%
DOGFISH, SMOOTH	2.3%
SKATE, NK	2.1%

^a Percentages shown are aggregate totals over 2017-2022 and do not reflect the percentages of non-target species caught on individual trips. This analysis describes only observed trips and has not been expanded to the fishery as a whole.

Recreational Fishery

There is a significant recreational fishery for summer flounder, primarily in state waters when the fish migrate inshore during the warm summer months. The Council and Commission determine annually whether to manage the recreational fishery under coastwide measures or conservation equivalency. Under conservation equivalency, state- or region- specific measures are developed through the Commission’s management process and submitted to NMFS. The combined state or regional measures must achieve the same level of harvest as a set of coastwide measures developed to adhere to the overall RHL. If NMFS considers the combination of the state- or region- specific measures to be "equivalent" to the coastwide measures, they may then waive regulations in federal waters. Anglers fishing in federal waters are then subject to the measures of the state in which they land summer flounder.

The recreational fishery has been managed using federal conservation equivalency each year since 2001. Since 2014, a regional approach has been used, under which the states within each region must have identical size limits, possession limits, and season length. Table 9 shows the 2023 and regional conservation equivalency measures, which remained unchanged from 2022.

Table 9: Summer flounder recreational fishing measures 2022-2023, by state, under regional conservation equivalency. Conservation equivalency regions (highlighted in alternating colors) 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	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	16.5	5 fish	May 21-September 19
Rhode Island (Private, For-Hire, and all other shore-based fishing sites)	18	4 fish	May 3-December 31
RI 7 designated shore sites	18	2 fish ^a	
	17	2 fish ^a	
Connecticut	18.5	4 fish	May 1-October 9
CT Shore Program (45 designated shore sites)	17		
New York	18.5		
New Jersey	17-17.99 slot limit	2 fish	May 2-September 27
	18	1 fish	
NJ Shore program site (ISBSP)	16	2 fish	
New Jersey/Delaware Bay COLREGS	17	3 fish	
Delaware	16	4 fish	January 1-December 31
Maryland			
PRFC			
Virginia			
North Carolina	15	1 fish	September 1-September 30 ^b

^a Rhode Island's shore program includes a combined possession limit of 6 fish, no more than 2 fish at 17-inch minimum size limit.

^b North Carolina has restricted their recreational season in recent years for all flounders in North Carolina (southern, gulf, and summer flounder) due to the need to end overfishing on southern flounder. North Carolina manages all flounder in the recreational fishery under the same regulations.

MRIP estimates indicate that recreational summer flounder harvest peaked in 1983, with 25.78 million fish landed, totaling 36.74 million pounds. Recreational harvest in numbers of fish reached a low in 2021 with 2.32 million fish landed (6.82 million pounds), while recreational harvest in pounds was lowest in 1989 at 5.66 million pounds (3.10 million fish). Recreational catch (harvest plus live and dead discards) peaked in 2010 with 58.89 million fish caught, and was lowest in 1989 with 5.06 million fish caught (Figure 6).

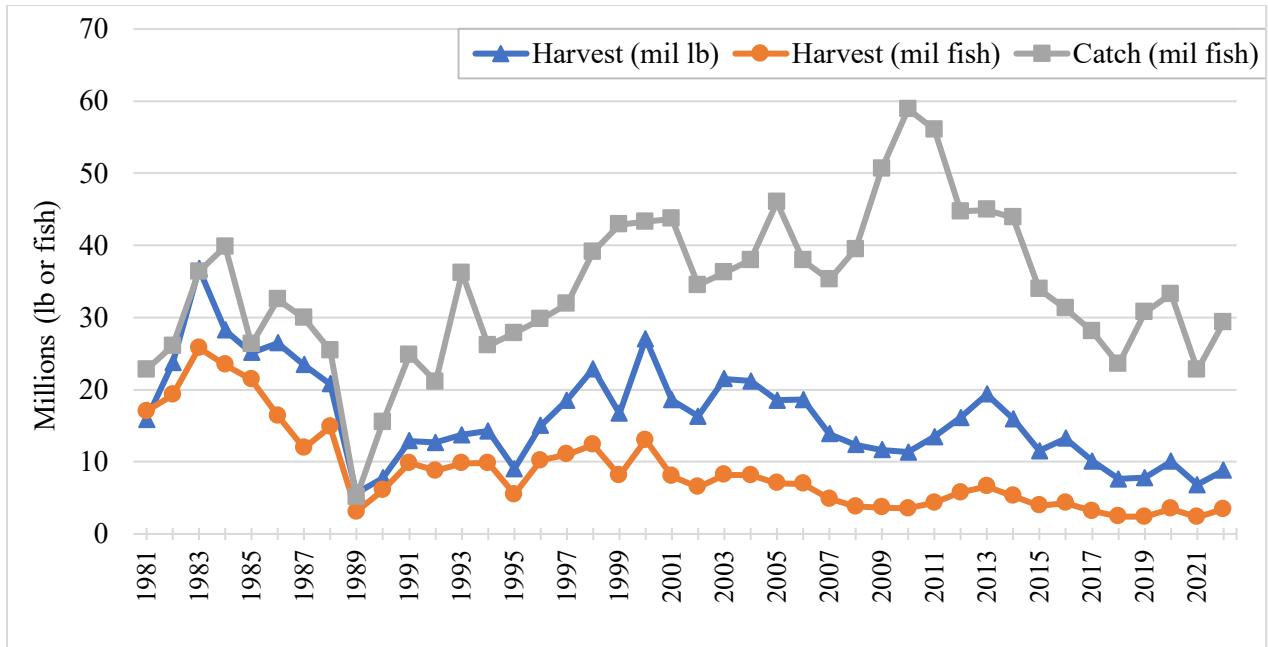


Figure 6: MRIP estimates of recreational summer flounder harvest in numbers of fish and pounds and catch in numbers of fish, ME - NC, 1981-2022. All values are in new MRIP currency.

Table 10: Summer flounder recreational landings, dead discards, and dead catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Information is provided in the “old” MRIP units for 2014-2018, and in the “new” MRIP units for 2019-2022. For summer flounder, ACLs and RHLs did not account for the revised MRIP data until 2019. Therefore, overage/underage evaluations must be based in the old MRIP units through 2018 and the new MRIP units starting in 2019. All values are in millions of pounds.

Year	Version of MRIP data used	Rec. harvest ^a	RHL	RHL over/under	Rec. dead disc. ^a	Rec. dead catch	ACL	ACL over/under
2014	Old MRIP (pre-revision)	7.39	7.01 ^b	5%	2.05	9.44	9.07	4%
2015		4.72	7.38	-36%	1.24	5.96	9.44	-37%
2016		6.18	5.42	14%	1.48	7.66	6.84	12%
2017		3.19	3.77	-15%	0.94	4.13	4.72	-13%
2018		3.35	4.42	-24%	0.97	4.32	5.53	-22%
2019	New MRIP (post-revision)	7.80	7.69	1%	3.04	10.84	11.51	-6%
2020 ^c		10.07	7.69	31%	2.52	12.60	11.51	9%
2021		6.82	8.32	-18%	2.20	9.02	12.48	-28%
2022		8.83	10.36	-17%	2.95	11.58	14.64	-21%
2023		--	10.62	--	--	--	14.9	--

^a Recreational harvest data from MRIP; recreational dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

^b For 2014, the RHL was adjusted for Research Set Aside (RSA). RHLs for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

^c Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to COVID-19. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019. For summer flounder, the 2020 harvest estimate relied on approximately 19% imputed data. For more information on imputation methods see: <https://www.mafinc.org/s/1-2020-Marine-Recreational-Catch-Estimates-QA-52121.pdf>]

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2022, 961 vessels held summer flounder federal party/charter permits. Many of these vessels also hold recreational permits for scup and black sea bass.

On average, an estimated 77% of the recreational landings (in numbers of fish) occurred in state waters over the past ten years (Table 11). Most summer flounder are typically landed in New York and New Jersey (Table 12).

About 81% of recreational summer flounder harvest from 2020-2022 was from anglers who fished on private or rental boats. About 4% was from party or charter boats, and about 15% was from anglers fishing from shore (Table 13).

The top non-target species in the recreational fishery were identified by a species guild approach that identifies species with the strongest associations on recreational trips from 2017-2021 (2021 MRIP data used here were preliminary and excluded wave 6). Sea robins, black sea bass, scup, smooth dogfish, and bluefish were highly correlated with summer flounder in the recreational fishery (J. Brust, personal communication March 2022).

Table 11: Estimated percentage of summer flounder recreational landings (in numbers of fish) from state vs. federal waters, Maine through North Carolina, 2013-2022.

Year	State ≤ 3 mi	EEZ > 3 mi
2013	77%	23%
2014	78%	22%
2015	82%	18%
2016	79%	21%
2017	80%	20%
2018	83%	17%
2019	79%	21%
2020	61%	39%
2021	66%	34%
2022	80%	20%
Avg. 2013- 2022	77%	23%
Avg. 2020 - 2022	69%	31%

Table 12: State contribution (as a percentage) to total recreational landings of summer flounder (in numbers of fish), from Maine through North Carolina, 2020-2022.

State	2020	2021	2022	2020-2022 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	2%	2%	3%	2%
Rhode Island	3%	2%	3%	3%
Connecticut	4%	5%	5%	5%
New York	21%	15%	26%	21%
New Jersey	57%	58%	47%	54%
Delaware	6%	4%	3%	4%
Maryland	2%	3%	3%	3%
Virginia	4%	10%	11%	8%
North Carolina	1%	1%	0%	1%
Total	100%	100%	100%	100%

Table 13: The percent of summer flounder landings (in number of fish) by recreational fishing mode, Maine through North Carolina, 2013-2022.

Year	Shore	Party/Charter	Private/Rental	Total number of fish landed (millions)
2013	11%	4%	85%	6.60
2014	7%	8%	84%	5.36
2015	7%	7%	86%	4.03
2016	8%	4%	89%	4.30
2017	13%	4%	83%	3.17
2018	11%	6%	84%	2.41
2019	10%	3%	87%	2.38
2020	18%	2%	80%	3.49
2021	11%	7%	82%	2.32
2022	15%	4%	81%	3.38
% of Total, 2013-2022	11%	5%	84%	--
% of Total, 2020-2022	15%	4%	81%	--

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Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 17, 2023
To: Chris Moore, Executive Director
From: Hannah Hart, Staff
Subject: Scup Specifications for 2024-2025

Executive Summary

This memorandum includes information to assist the Mid-Atlantic Fishery Management Council's (Council's) Scientific and Statistical Committee (SSC) and Monitoring Committee in recommending 2024-2025 catch and landings limits for scup, as well as scup commercial management measures for 2024. Additional information on fishery performance and past management measures can be found in the 2023 Scup Fishery Information Document and the 2023 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by advisors.¹

In June 2023, the Northeast Fisheries Science Center (NEFSC) provided a management track assessment update for scup, which updated the current assessment model with data through 2022.² The assessment indicated that the scup stock was not overfished, and overfishing was not occurring in 2022 relative to the updated biological reference points calculated through the assessment. Retrospective adjustments were made to the model results. Adjusted spawning stock biomass (SSB) was estimated to be about 425 million pounds (193,087 mt) in 2022, about 2.5 times the SSB_{MSY} proxy reference point of 173.27 million pounds (78,593 mt). Adjusted fishing mortality on fully selected age 4 scup was 0.098 in 2022, about 52% of the F_{MSY} proxy reference point of 0.190. The 2017-2022 year classes are estimated to be below average.

The Magnuson-Stevens Act requires the Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for Acceptable Biological Catch limits (ABCs), preventing overfishing, and achieving maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC.

There are currently no catch and landings limits in place for scup beyond the 2023 fishing year. The SSC should recommend ABCs for 2024-2025 for the Council and Atlantic States Marine

¹ Available at: <https://www.mafmc.org/fishery-performance-reports>

² Available at: <https://apps-nefsc.fisheries.noaa.gov/saw/sasi.php>

Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Board (Board) to consider at their joint August 2023 meeting. Two-year specifications are recommended to align with the current stock assessment schedule for scup, under which the next update is expected in 2025 to inform 2026-2027 specifications.

ABC projections for 2024-2025 were provided by NEFSC staff using the updated FMSY proxy = $F40\% = 0.190$. The projections sample from the estimated recruitment for 1984-2022 and assume that the OFL CV = 60% per MAFMC SSC precedent. Projections were provided for both varying ABCs from 2024-2025, as well as an averaging approach where the 2024-2025 ABCs are identical. The Council and Board have requested the ability to determine which approach is more appropriate from a policy standpoint; therefore, the SSC is requested to provide recommendations for both varying and averaged ABCs. The resulting ABCs and associated staff-recommended commercial and recreational limits are provided in Table 1. Staff recommend that the Council and Board adopt the varying ABC approach for 2024-2025. This would result in a 2024 ABC of 44.13 million pounds (20,015 mt) and a 2025 ABC of 39.99 million pounds (18,139 mt), which would represent a 48.7% increase in 2024 and 34.8% increase in 2025 from the 2023 ABC of 29.67 million pounds (13,458 mt).

Based on the SSC's recommendations for ABCs, the Monitoring Committee recommends sector specific catch and landings limits and management measures to constrain catch and landings to these limits. Specifically, the Monitoring Committee should review recent fishery performance and make a recommendation to the Council and Board regarding 2022-2023 commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs), commercial quotas, and recreational harvest limits. The Monitoring Committee will also consider whether any revisions are needed to the commercial management measures (minimum fish size, minimum mesh size, possession limits, etc.) for 2022. Recreational measures for 2022 will be considered later in 2021.

Table 1: The current (2023) catch and landings limits for scup as well as staff recommended limits for 2024-2025. The final 2024-2025 values may differ based on the recommendations of the SSC, Monitoring Committee, Council, and Board.

Mgmt. measure	2023		Basis	2024		2025		Basis
	mil lbs.	mt		mil lbs.	mt	mil lbs.	mt	
OFL	30.09	13,649	Assessment projections	44.74	20,295	40.55	18,393	Assessment projections
ABC	29.67	13,458	Assessment projections & risk policy	44.13	20,015	39.99	18,139	Assessment projections & risk policy
ABC discards	6.39	2,900	Assessment projections	9.55	4,334	9.16	4,154	Assessment projections
Com. ACL	19.29	8,750	65% of ABC <i>(new com. allocation)</i>	28.68	13,010	25.99	11,790	65% of ABC
Com. ACT	19.29	8,749	No deduction from ACL for management uncertainty	28.68	13,010	25.99	11,790	No deduction from ACL for management uncertainty
Projected com. discards	5.28	2,394	82.6% of ABC discards (avg. % of dead discards from commercial fishery, 2017-2019)	7.39	3,350	7.08	3,211	77.3% of ABC discards (avg. % of dead discards from commercial fishery, 2020-2022)
Com. quota	14.01	6,355	Com. ACT minus projected com. discards	21.30	9,660	18.91	8,579	Com. ACT minus projected com. discards
Rec. ACL	10.39	4,713	35% of ABC <i>(new rec. allocation)</i>	15.44	7,005	14.00	6,349	35% of ABC
Rec. ACT	10.39	4,713	No deduction from ACL for management uncertainty	15.44	7,005	14.00	6,349	No deduction from ACL for management uncertainty
Projected rec. discards	1.12	506	17.4% of the ABC discards (avg. % of dead discards from rec. fishery, 2017-2019)	2.17	984	2.08	943	22.7% of the ABC discards (avg. % of dead discards from rec. fishery, 2020-2022)
RHL	9.27	4,205	Rec. ACT minus projected rec. discards	13.27	6,021	11.92	5,406	Rec. ACT minus projected rec. discards

Stock Status and Biological Reference Points

In June 2023, the NEFSC provided the 2023 management track assessment for scup. This assessment retained the model structure of the previous benchmark stock assessment, completed in 2015,³ and incorporated fishery catch and fishery-independent survey data through 2022.

The updated fishing mortality (F) reference point is $F_{MSY} \text{ proxy} = F_{40\%} = 0.190$ and the updated spawning stock biomass (SSB) reference point is $SSB_{MSY} \text{ proxy} = SSB_{40\%} = 173.27$ million pounds (78,593 mt). The minimum biomass threshold of $\frac{1}{2} SSB_{MSY} \text{ proxy} = \frac{1}{2} SSB_{40\%} = 86.64$ million pounds (39,297 mt, Table 2).

Table 2: Scup biological reference points from the 2023 management track stock assessment.

	Spawning stock biomass	Fishing mortality rate (F)
Terminal year estimate (2022)	425 mil lbs. (193,087 mt)	0.098
Target	173.27 mil lbs. (78,593 mt)	N/A
Threshold	86.64 mil lbs. (39,297 mt)	0.190
Status	Not overfished	Not overfishing

According to the 2023 assessment, the scup stock from Cape Hatteras, North Carolina extending north to the US-Canada border was not overfished and overfishing was not occurring in 2022.⁴ Retrospective adjustments were made to the model results. The retrospective adjustments increased the SSB estimate and decreased the F estimate. Adjusted values are used in the projections and management. Adjustments have not been required in previous scup assessment given retrospective patterns were not strong in previous assessment. From the 2023 management track assessment, adjusted SSB was estimated to be about 425 million pounds (193,087 mt) in 2022, about 2.5 times the $SSB_{MSY} \text{ proxy}$ reference point of 173.27 million pounds (78,593 mt, Figure 1), meaning that the stock was not overfished in 2022. There was a notable increasing trend in SSB since the early 2000s; however, in recent years SSB has declined from a peak in 2017 (Figure 1).

Adjusted fishing mortality on fully selected age 4 scup was 0.098 in 2022, about 52% of the $F_{MSY} \text{ proxy}$ reference point of 0.190 (Figure 2), meaning that overfishing was not occurring in 2022. The 2015 year class is estimated to be the largest in the time series at 569 million fish, while the 2017-2022 year classes are estimated to be below average (Figure 2).

The Northeast Regional Coordinating Council (NRCC)'s stock assessment process now has scup receiving management track updates every two years. The next management track assessment update is expected in 2025 to inform 2026-2027 catch and landings limits.

³ 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: <https://repository.library.noaa.gov/view/noaa/4975>

⁴ Available at: <https://apps-nefsc.fisheries.noaa.gov/saw/sasi.php>

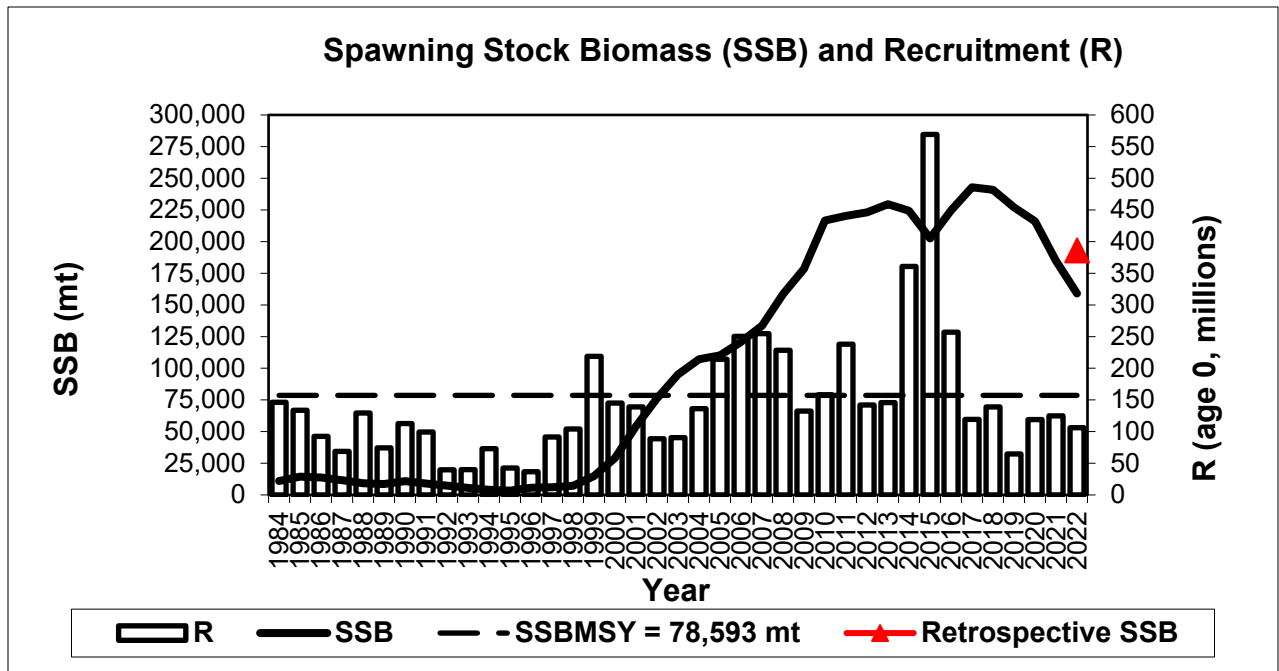


Figure 1: Scup spawning stock biomass and recruitment, 1984-2019. The horizontal dashed line represents the biomass target from the 2023 management track stock assessment. Adjusted SSB in 2022 for comparison against the SSB_{MSY} proxy reference point is 193,087 mt.

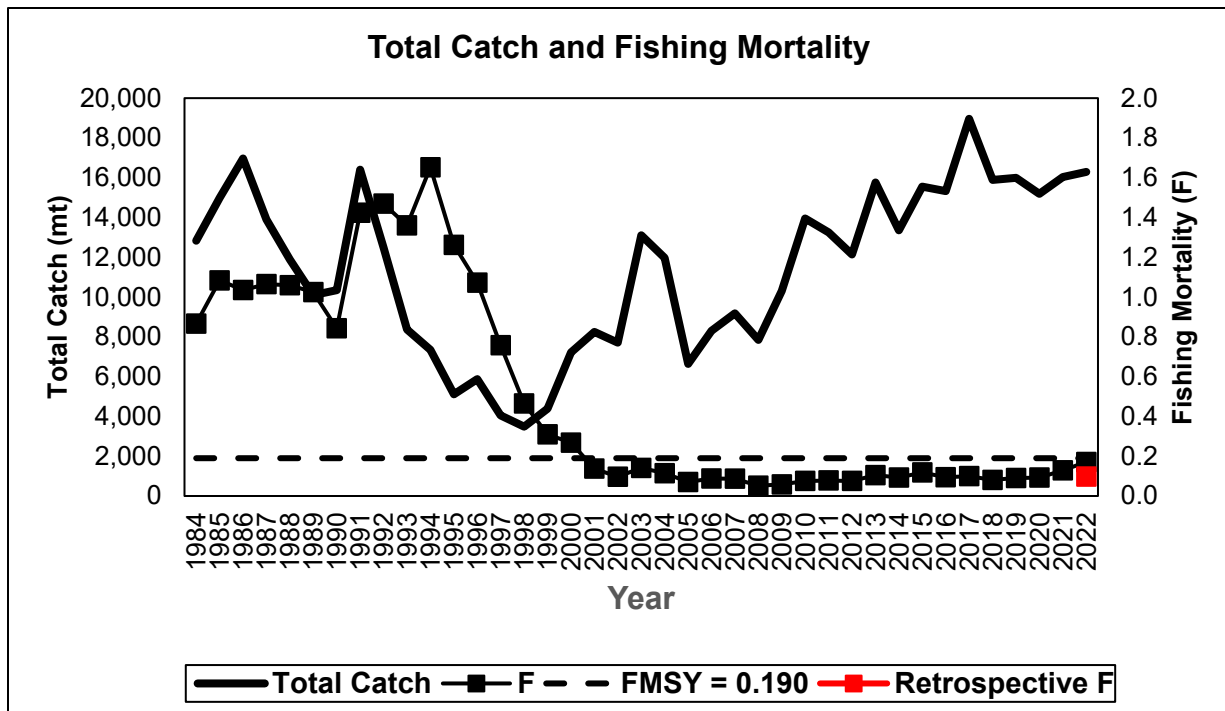


Figure 2: Total fishery catch and fishing mortality rate (F) for fully selected age 4 scup, 1984-2019. The horizontal dashed line is the fishing mortality reference point from the 2023 management track stock assessment. The red square is the retrospectively adjusted fishing mortality value for 2022. The adjusted value is used in management.

Recent Catch and Fishery Performance

Total Catch

Table 3 shows scup total catch and catch limits from 2019 through 2023, as well as the overfishing limit (OFL) from which the ABC is derived. The ABC is set less than or equal to the OFL to account for scientific uncertainty. The OFL for scup was likely exceeded in 2022. The scup ABC was exceeded in 2021, and likely again in 2022.

Table 3: Total scup catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC. All values are in millions of pounds. Total catch calculations use “old” MRIP data in 2019, and “new” MRIP data for 2020-2022. Catch data from 2023 management track assessment.^a

Year	Total catch^a	OFL	OFL overage/underage	ABC	ABC overage/underage
2019	26.55	41.03	-35%	36.43	-27%
2020	33.50	41.17	-19%	35.77	-6%
2021	35.35	35.3	0%	34.81	2%
2022	35.92	32.56	10%	32.11	12%
2023	--	30.09	--	29.67	--

^a Numbers here may vary slightly from those in the 2023 Fishery Information Document due to the Catch Accounting and Monitoring System (CAMS) commercial fishery estimates now being used for 2020-2022 as reflected in the 2023 MTA.

Commercial Fishery

The commercial scup fishery has consistently underharvested their quota since 2014, ranging from 16% to 44% below the annual quotas. In 2022, commercial landings were about 12.14 million pounds (5,507 mt), about 40% below the commercial quota of 20.38 million pounds (9,244 mt; Table 4).

Since 2019, commercial dead discards compared to projected levels have been variable. Some years, like 2020 and 2022, projected discards resembled a good estimate for commercial discards while other years like 2022, were less accurate. However, since 2014 there was a single ACL overage in 2017, this overage was attributed to the higher-than-expected dead discards, as commercial fishery landings for scup are typically well controlled to the commercial quota (Table 4).

Preliminary 2023 commercial landings during the Winter I Quota Period indicate that 57.9% of the quota was landed and as of July 7, 2023, about 35.86% of the 2023 Summer Quota Period quota has been landed. Preliminary 2023 Winter I landings were slightly above 2022 landings; however, summer 2023 landings to date are slightly below last year’s trajectory.^{5,6}

⁵ Based on data available at https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/h/scup/FYALL_REPORTS//2021-04-29_scup_coast_qm.html.

⁶ Based on data available at https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/h/scup/scup_coast_qm.html.

Table 4: Scup commercial landings, dead discards, and catch compared to the commercial quota and commercial ACL, 2014-2023. All values are in millions of pounds. Landings and discard data from 2023 management track assessment.^a

Year	Com. landings ^a	Com. quota	Quota over/under	Com. dead discards ^a	Proj. Com. dead discard	Proj. dead disc. over/under	Com. catch ^a	ACL	ACL over/under
2014	15.96	21.95	-27%	2.16	6.12	183%	18.12	28.07	-35%
2015	17.03	21.23	-20%	3.79	5.11	35%	20.82	26.35	-21%
2016	15.76	20.47	-23%	6.12	3.79	-38%	21.88	24.26	-10%
2017	15.45	18.38	-16%	10.43	3.77	-64%	25.88	22.15	17%
2018	13.37	23.98	-44%	7.26	4.43	-39%	20.63	30.53	-32%
2019	13.78	23.98	-43%	6.13	4.43	-28%	19.91	28.42	-30%
2020	13.62	22.23	-39%	5.76	5.80	1%	19.37	27.90	-31%
2021	13.10	20.50	-36%	4.18	6.65	59%	17.28	27.15	-36%
2022	12.14	20.38	-40%	4.79	4.67	-2%	16.93	25.05	-32%
2023	--	14.01	--	--	5.28	--	--	19.29	--

^a Numbers here may vary slightly from those in the 2023 Fishery Information Document due to the Catch Accounting and Monitoring System (CAMS) commercial fishery estimates now being used for 2020-2022 as reflected in the 2023 MTA.

Recreational Fishery

Recreational fishery performance relative to RHLs through 2019 cannot be evaluated using the revised MRIP data, since past RHLs were set based on assessments that used the old data. A performance evaluation for 2014-2022 using old or new MRIP data, depending on the year, is provided in Table 5. Recreational performance has been more variable relative to the limits compared to the commercial fishery but recreational landings and catch were above the limits in 2020 through 2022. Recreational harvest was estimated at approximately 17.36 million pounds (7,875 mt) in 2022, about 186% of the 2022 RHL.

As of this memo, recreational harvest estimates for 2023 are only available through April, which does not provide meaningful information about 2023 recreational harvest trends for scup given that in recent years wave 2 (March/April) has accounted for 0% to 10% of annual scup harvest depending on the year.

Table 5: Scup recreational landings, dead discards, and catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Information is provided in the “old” MRIP units for 2014-2019, and in the “new” MRIP units from the 2023 management track assessment for 2020-2022. For scup, 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	Version of MRIP data used	Rec. land.	RHL	RHL over/under	Rec. dead disc.	Proj. rec. dead disc.	Proj. dead disc. over/under	Rec. catch	ACL	ACL over/under
2014	Old MRIP (pre-revision)	4.43	7.03	-37%	0.50	0.89	76%	5.49	7.92	-31%
2015		4.41	6.8	-35%	0.50	0.63	27%	5.69	7.43	-23%
2016		4.26	6.09	-30%	0.78	0.75	-3%	6.16	6.84	-10%
2017		5.42	5.5	-1%	0.90	0.75	-17%	7.80	6.25	+25%
2018		5.61	7.37	-24%	0.60	0.65	8%	7.03	8.61	-18%
2019	Old MRIP (provided by NEFSC)	5.41	7.37	-27%	1.23	0.65	-48%	6.64	8.01	-17%
2020	New MRIP (post-revision)	12.91 ^a	6.51	+98%	1.19 ^a	1.36	14%	14.10 ^a	7.87	+79%
2021		16.62 ^a	6.07	+174%	1.44 ^a	1.59	11%	18.06 ^a	7.66	+136%
2022		17.36 ^a	6.08	+186%	1.63 ^a	0.99	-39%	18.99 ^a	7.06	+169%
2023		--	9.27	--	--	1.12	--	--	10.39	--

^a Data from 2023 management track assessment. Values here may vary slightly from those in the 2023 Fishery Information Document.

Review of Prior SSC Recommendations

In July 2022, the SSC recommended 2022 and 2023 ABCs for scup based on new stock status information and projections from the 2021 management track stock assessment.

The SSC recommended that a 60% coefficient of variation (CV) be applied to the OFL estimate to derive the ABC for scup. This decision came from the high data quality, as well as consistency of signals from surveys, catch at age, and model results. There was also a relatively low effect of revised MRIP estimates in the stock assessment; only minor retrospective patterns in the statistical catch-at-age model; and the unlikelihood that additional adjustments (e.g., for ecological factors or below-average recruitment in the past two years) would increase uncertainty. Several surveys show declines or low abundance in early years to record lows in the mid-1990s and increases in abundance thereafter. Age structure in surveys shows a decline or low abundance of older ages in survey catches in early years and increases in abundance of older ages in recent years. Age structure in commercial landings-at-age and recreational landings-at-age show similar trends of increasing abundance of older ages in the stock. Several large recruitment events have been indicated by survey indices. In combination, these trends are consistent with lower fishing mortality rates in recent years, and increasing stock abundance as indicated by model results. Although up to 44% of the catch weight is attributable to the recreational fishery, the increase in recreational catch

related to new MRIP estimates is relatively low in comparison to other stocks. There has been no obvious or clear trend in recent recruitment over the past decade, although a declining trend in recruitment is beginning to emerge, so adjustment of projected recruitment currently appears unwarranted. There is no discernable impact of thermal habitat on interannual variation in availability, so adjustment of survey indices to account for thermal habitat effects also appears unwarranted.

The SSC considered the following to be the most significant sources of scientific uncertainty with determination of the OFL and/or ABC:

- While older age scup (age 3+) are represented in the catch used in the assessment model, most indices used in the model do not include ages 3+. As a result, the dynamics of the older ages of scup are driven principally by catches and inferences regarding year class strength.
- A sizeable portion of the stock biomass is in older age classes which are assumed to have low F_s as a result of the selectivity pattern imposed in the model.
- Uncertainty exists with respect to the estimate of natural mortality (M) used in the assessment.
- Uncertainty exists as to whether the MSY proxies ($SSB_{40\%}$, $F_{40\%}$) selected and their calculated precisions are appropriate for this stock.
- The SSC assumed that OFL has a lognormal distribution with a $CV = 60\%$, based on a meta-analysis of survey and statistical catch at age (SCAA) model accuracies.
- Survey indices are particularly sensitive to Scup availability, which results in high inter-annual and regional variability – efforts were made to address this question by weighting surveys in the SAW/SARC that should be continued.
- The projection on which the ABC was determined is based on an assumption that the 2020 and 2021 ABCs will be caught.

Table 6 shows the SSC recommended 2022-2023 OFLs, ABCs, and P^* values. ABCs are based on projections that assume the ABC will be fully caught in each year; recruitment is sampled from 1984-2018. OFL total catches are catches in each year fishing at $F_{MSY} = 0.200$, prior to calculation of the associated annual ABC. The ABC projections were based on application of the Council’s risk policy for a stock with a typical life history, resulting in an ABC P^* of 49% in each year. Due to the Council’s risk policy adopted in 2019, only ABCs associated with the traditional (variable) approach could be offered for 2022 and 2023.

In July 2022, the SSC reviewed the previously adopted ABC along with a data update for scup, and recommended no changes to the previously recommended 2023 ABC adopted by the Council.

Table 6: Previously recommended 2022 and 2023 OFLs, ABCs, and ABC P^* value (Source: personal communication, Mark Terceiro, Northeast Fisheries Science Center).

Year	OFL total catch		ABC total catch		ABC P^*
	mil lbs.	mt	mil lbs.	mt	
2022	32.56	14,770	32.11	14,566	0.49
2023	30.09	13,648	29.67	13,458	0.49

2024-2025 ABCs

The ABC projections sample from the estimated recruitment for 1984-2022 and assume the 2022-2023 ABCs were caught (Table 7 and Table 8). The ABC projections are based on application of the Council’s risk policy, resulting in an annual ABC P* of 49% for the varying ABC approach and an average P* of 49% (2024-2025) for the averaged ABC approach. A CV of 60% was applied to the OFL, consistent with past SSC recommendations.

The SSC has been asked to recommend two sets of ABCs for 2024-2025, one based on assuming varying ABCs each year (Table 7) and one where ABCs are constant based on averaging the ABCs across 2024 and 2025 (Table 8). Whether or not to average the ABCs is a policy decision for the Council and Board. Because the Council is unable to recommend ABCs higher than what the SSC recommends for any given year, the SSC is asked to provide ABC recommendations for both approaches to allow the Council and Board to select their preferred approach.

The projected spawning stock biomass trajectory is similar in either scenario (Table 7 and Table 8) and there are tradeoffs to both ABC approaches. The average ABC approach would allow for stability in catch and landings limits across two years and would allow for a higher 2025 ABC than the varying approach; however, it would require a lower 2024 ABC than under the varying approach due to the declining biomass trajectory. The higher 2024 ABC using the varying approach will require less restriction on the recreational fishery in 2024 compared to the averaged approach. However, it will require a greater restriction of total catch in 2025 compared to the averaged approach and thus more restriction of the recreational fishery if sector allocations remain status quo. Additionally, under the averaging approach presented in Table 8 the p* in 2025 exceeds 0.5 and therefore is not a viable option under the provisions of the MSA. In 2021, the Council and Board recommended the varying ABC approach for 2022-2023 measures under similar decreasing biomass conditions. For these reasons, staff recommend that the Council and Board adopt ABCs for 2024-2025 based on the varying ABC approach.

Updated estimates of SSB, F, and recruitment are expected to be available in 2025 to inform 2026-2027 specifications. Unless an interim data update (i.e., updated fishery and survey data without updated estimates of SSB, F, and recruitment) shows strong signals of unexpected changes in the stock, it is unlikely that the 2025 catch and landings limits will be updated in 2024 based on biological, fishery, or survey data.

Table 7: Scup 2023 management track assessment projections for varying 2024-2025 ABCs, including OFL and ABC total catch, ABC projected F, projected SSB, and SSB/SSB_{MSY}. These projections assume application of the current Council risk policy with a 60% OFL CV.

Year	OFL Total Catch		ABC Total Catch		ABC F	ABC P*	SSB		SSB/SSB _{MSY}
	mil lb	mt	mil lb	mt			mil lb	mt	
2023	30.09	13,649	29.67	13,458	0.115	0.495	461.66	209,407	266%
2024	44.74	20,295	44.13	20,015	0.187	0.490	409.24	185,626	236%
2025	40.55	18,393	39.99	18,139	0.187	0.490	359.66	163,140	208%

Table 8: Scup 2023 management track assessment projections for averaged 2024-2025 ABCs, including OFL and ABC total catch, ABC projected F, projected SSB, and SSB/SSB_{MSY}. These projections assume application of the current Council risk policy with a 60% OFL CV.

Year	OFL Total Catch		ABC Total Catch		ABC F	ABC P*	SSB		SSB/SSB _{MSY}
	mil lb	mt	mil lb	mt			mil lb	mt	
2023	30.09	13,649	29.67	13,458	0.115	0.495	461.66	209,407	266%
2024	44.74	20,295	42.06	19,077	0.178	0.456	410.02	185,986	237%
2025	40.77	18,495	42.06	19,077	0.196	0.522	360.78	163,645	208%

Sector-Specific Catch and Landings Limits

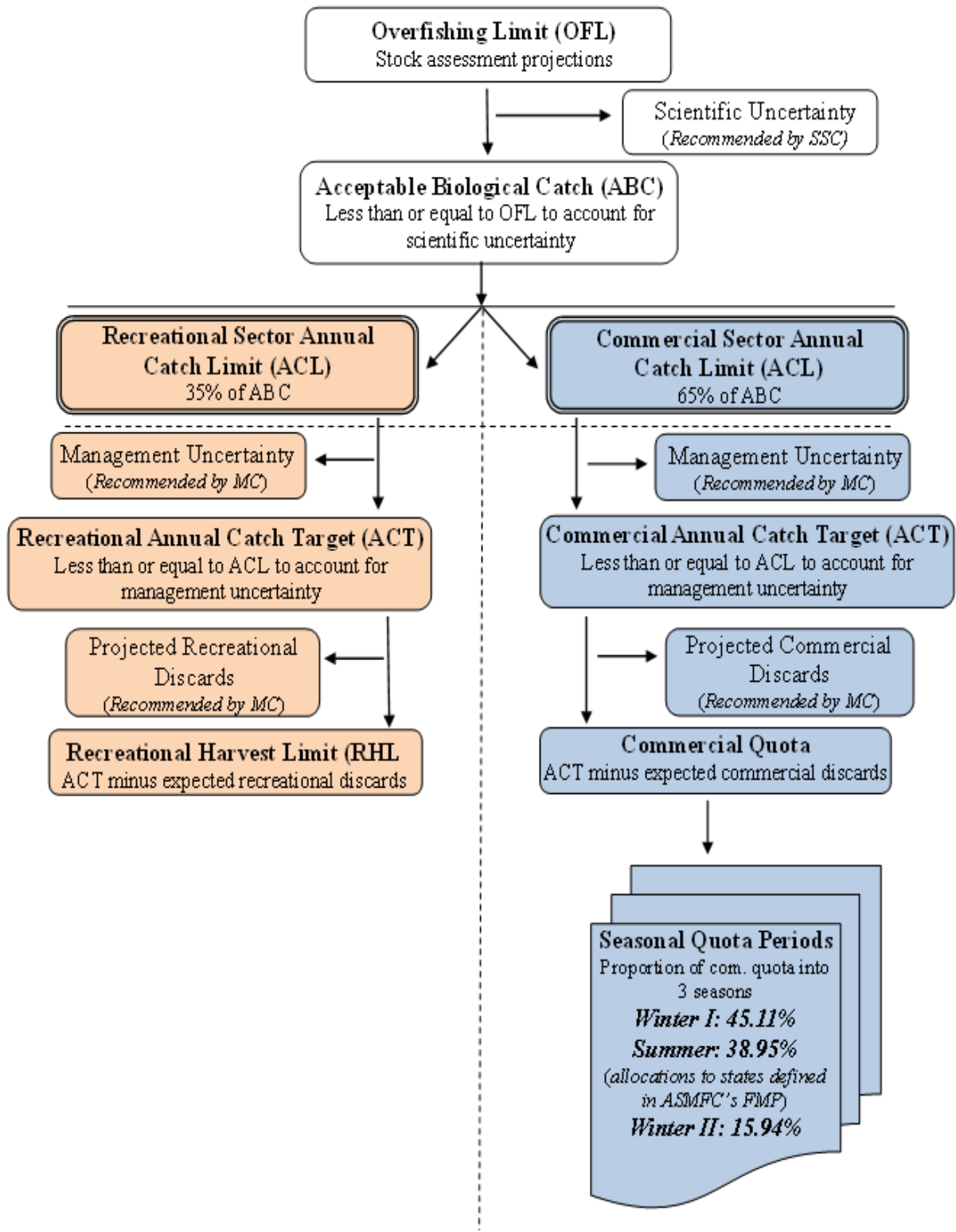
Commercial and Recreational Annual Catch Limits

The scup commercial/recreational allocation was recently revised via Amendment 22 to the Fishery Management Plan (FMP), effective in 2023, such that 65% of the ABC is allocated to the commercial fishery as a commercial ACL, and 35% is allocated to the recreational fishery as a recreational ACL.⁷ Figure 3 illustrates the current flowchart for deriving commercial and recreational catch and landing limit from the OFL and ABC.

Under the staff recommended varying ABCs, these allocation percentages would result in a commercial ACL of 28.68 million pounds (13,010 mt) and a recreational ACL of 15.44 million pounds (7,005 mt) in 2024, and a commercial ACL of 25.99 million pounds (11,790 mt) and a recreational ACL of 14.00 million pounds (6,349 mt) in 2025.

⁷ <http://www.mafmc.org/actions/sfsbsb-allocation-amendment>

Figure 3: Current catch and landing limit flowchart for scup, updated to reflect commercial/recreational allocation revisions that became effective in 2023.



Annual Catch Targets

The Monitoring Committee recommends ACTs for the Council and Board's consideration. ACTs may be set less than or equal to sector-specific ACLs to account for management uncertainty. Management uncertainty is comprised of two parts: uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e., estimation errors). Management uncertainty can occur because of a lack of sufficient information about the catch (e.g., due to late reporting, underreporting, and/or misreporting of landings or discards) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels). The Monitoring Committee should consider all relevant sources of management uncertainty in the scup fishery when recommending ACTs.

Recreational harvest is estimated through a statistical survey design (the Marine Recreational Information Program), while commercial harvest is more census based due to mandatory vessel and dealer reporting requirements. Given these differences, the commercial fishery can be closed in-season when landings approach the quota but there is no in-season closure authority for the recreational fishery due to the timing of recreational data availability. For these reasons, recreational landings can be more difficult to constrain and predict than commercial landings.

The commercial quota monitoring system has largely been successful in preventing quota overages for scup, and as shown in Table 4, commercial landings have not exceeded the quota over the past 10 years. Although in the past 10 years there has not been a quota overage, in 2017 there was a commercial ACL overage. This overage, however, was attributed to the higher-than-expected dead discards, as commercial fishery landings for scup are typically well controlled to the commercial quota (Table 4).

From 2014-2019, recreational landings were consistently below the RHL but from 2020-2022 recreational landings were consistently above the RHL. The Percent Change Approach and the use of a new recreational harvest estimation model (the Recreational Demand Model) were both applied to the development recreational scup measures in 2023 for the first time. Application of this approach for scup in 2023 resulted in recreational measures that met the required coastwide 10% reduction in harvest. As previously stated, it is not possible to predict 2023 recreational harvest based on currently available data.

The Percent Change Approach considers the RHL in the upcoming year(s) as well as biomass compared to the target level when setting measures. In some cases, RHL and ACL overages are permitted under this approach. In other cases, this approach requires more restrictive measures than would be needed to prevent RHL and ACL overages. The Percent Change Approach will sunset after the 2025 fishing year with the goal of using an improved process for setting 2026 recreational measures. A management action to consider the appropriate replacement for the Percent Change Approach is currently in development.

Additionally, a separate amendment is under development to consider managing for-hire recreational fisheries separately from other recreational fishing modes (referred to as sector separation) and improvements to recreational catch accounting.

Given these ongoing management actions, staff recommend no buffer for management uncertainty in the recreational fishery, consistent with past practice for this fishery.

Projected Dead Discards

Projected discards are removed from the sector-specific ACTs to derive landings limits, which include annual commercial quotas and RHLs (Figure 3). The methodology to calculate projected dead discards is not prescribed in the FMP and can be modified on an annual basis. The methodology can also vary by sector. Typically, the Monitoring Committee has apportioned dead discards based on a 3-year moving average of the proportion of discards from each sector, applied to the total projected discards for the upcoming fishing year(s).

In 2022, when the Monitoring Committee first considered discard projections under the revised allocations, the group discussed a few different methods for generating projected dead discards by sector. One option considered by the Monitoring Committee, but not applied, was a linear regression approach examining sector dead discards as a function of sector catch, ACLs, or landings (not selected due to a lack of strong correlations for scup). Another option that was not adopted was a simple moving average (e.g., 3 years) of discards in pounds for each sector (not applied due to how much discard levels can vary based on availability of different size classes as well as regulations).

Staff recommend that for 2024-2025, sector discards continue to be calculated by applying the 3-year moving average proportion of discards by sector to total projected dead discards. These projected sector discards are then removed from the sector-specific ACTs. This approach relies on projections of total discards from the NEFSC which account for age structure of the population (Table 9). The NEFSC projected total discards assume total dead catch will be equal to the ABC and also account for the recent age structure of the population and selectivity of the fisheries. The NEFSC projections can account for higher or lower than average year classes when estimating discards in future years. For example, high discards in 2017 were likely driven by the peak in recruitment seen in 2015 as shown in Figure 1. This year class would not be expected to contribute to high discards in 2024 and 2025 given fisheries selectivity and the likely greatly diminished size of the year class.

Table 9: ABC projections split into projected total projected landings and discards, for both annual and averaged 2024-2025 ABCs.

Varying (staff recommendation)						
Year	ABC Total Catch		ABC Landings		ABC Discards	
	mil lb	mt	mil lb	mt	mil lb	mt
2023	29.67	13,458	23.59	10,701	6.08	2,757
2024	44.13	20,015	34.57	15,681	9.55	4,334
2025	39.99	18,139	30.83	13,985	9.16	4,154
Averaged						
Year	ABC Total Catch		ABC Landings		ABC Discards	
	mil lb	mt	mil lb	mt	mil lb	mt
2023	29.67	13,458	23.59	10,701	6.08	2,757
2024	42.06	19,077	32.95	14,944	9.11	4,133
2025	42.06	19,077	32.43	14,711	9.63	4,366

Evaluating the proportion of discards by sector from 2020-2022, 77.3% of dead discards came from the commercial fishery and 22.7% from the recreational fishery. Applying these proportions to the annual total projected dead discards in each year under the varying ABC approach, the resulting projected commercial and recreational dead discards are shown in Table 1.

Commercial Management Measures

The commercial measures that can be modified during specifications are discussed below, including the commercial Winter I and Winter II quota period possession limits, minimum size limit, minimum mesh sizes, and commercial pot and trap regulations. Given there is no new information to suggest changes to commercial management measure are needed, staff recommend no changes to commercial measures for 2024.

Commercial Winter I and Winter II Quota Period Possession Limits

Commercial possession limits are designed to help constrain landings to the seasonal period quotas. The Winter I possession limit is 50,000 pounds. After 80% of the Winter I quota is landed, the possession limit drops to 1,000 pounds. The Winter II possession limit is initially set at 12,000 pounds. If the Winter I quota is not fully harvested, as has been the case in recent years, the Winter II possession limit increases by 1,500 pounds for every 500,000 pounds of scup not landed during the Winter I period. There are no federal possession limits during the Summer quota period; however, there are state possession limits⁸. These quota period possession limits have not been modified since 2012.

Commercial Minimum Fish Size

The commercial minimum size limit for scup is 9 inches total length and has been in place since 1996. The minimum size limit applies to all commercial landings of scup, including landings of incidental catch. Over the years, advisors have expressed differing opinions on the commercial minimum size limit, but no changes have been adopted.

Commercial Trawl Mesh Size

Trawl vessels which possess more than 1,000 pounds of scup from October 1 through April 14, more than 2,000 pounds of scup from April 15 through June 15, and more than 200 pounds of scup from June 16 through September 30 must use a minimum mesh size of 5.0 inches.

⁸ Prior to 2018, October was included in the summer quota period. The allocation percentages were the same as shown above.

Hasbrouck et al. (2018) confirmed that the current minimum mesh sizes are effective at releasing most fish smaller than the commercial minimum size. This study also considered the potential for a common minimum mesh size for summer flounder, scup, and black sea bass. The results were not able to identify an effective common mesh size for all three species at the current size limits; however, the authors concluded that a common mesh size of 4.5 or 5 inches diamond for scup and black sea bass would be effective at releasing undersized fish.⁹ Further consideration of a shared minimum mesh size has not been prioritized by the Council and Board.

Commercial Pot and Trap Regulations

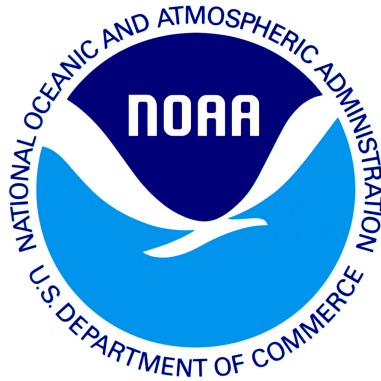
NMFS dealer data show that pots/traps accounted for about 3% of total commercial scup landings in 2021. Pots and traps used to commercially harvest scup must have either a circular escape vent measuring at least 3.1 inches in diameter, square escape vents with each side being at least 2.25 inches in length, or rectangle escape vents of equal or greater size.

Recreational Management Measures

Recreational management measures for 2024-2025 will be developed later this fall, using the Percent Change Approach. The Monitoring Committee will meet in the fall of 2023 to review available recreational data and Recreational Demand Model estimates of recreational harvest under current measures, and to make recommendations for any adjustments that may be needed to recreational bag, size, and season limits. This will be the first year that multi-year recreational measures (2024-2025) will be considered as specified under the Percent Change Approach.

⁹ Hasbrouck, E., S. Curatolo-Wagemann, T. Froelich, K. Gerbino, D. Kuehn, P. Sullivan, J. Knight. 2018. Determining Selectivity and Optimum Mesh Size to Harvest Three Commercially Important Mid-Atlantic Species - A Report to the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission. Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf

draft working paper for peer review only



Scup

2023 Management Track Assessment Report

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Fisheries Science Center
Woods Hole, Massachusetts

Compiled 06-05-2023

This assessment of the Scup (*Stenotomus chrysops*) stock is an update of the existing 2021 Management Track Assessment (NEFSC 2022). Based on the previous assessment the stock was not overfished and overfishing was not occurring. This 2023 Management Track Assessment updates fishery catch data, research survey indices of abundance, the ASAP assessment model, and biological reference points through 2022. Additionally, stock projections have been updated through 2025.

State of Stock: Based on this updated assessment, the Scup (*Stenotomus chrysops*) stock is not overfished and overfishing is not occurring (Figures 1-2). Retrospective adjustments were made to the model results. Adjusted Spawning Stock Biomass (SSB) in 2022 was estimated to be 193,087 mt which is 246% of the biomass target for this stock ($SSB_{MSY} proxy = 78,593$; Figure 1). The adjusted 2022 fully selected fishing mortality was estimated to be 0.098 which is 52% of the overfishing threshold proxy ($F_{MSY} proxy = 0.19$; Figure 2).

Table 1: Catch and model results for Scup. All weights are in (mt), recruitment is in (000s), and F_{Full} is the fishing mortality on fully selected age 4. Model results are unadjusted values from the current updated ASAP assessment.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	<i>Data</i>									
Commercial landings	8,105	7,239	7,725	7,147	7,007	6,064	6,252	6,177	5,944	5,507
Commercial discards	1,350	981	1,718	2,778	4,733	3,293	2,779	2,611	1,895	2,171
Recreational landings	5,739	4,659	5,527	4,536	6,143	5,887	6,403	5,863	7,540	7,875
Recreational discards	568	480	581	862	1,079	644	560	541	653	738
Catch for Assessment	15,762	13,359	15,550	15,322	18,961	15,888	15,994	15,192	16,032	16,291
	<i>Model Results</i>									
Spawning Stock Biomass	229,544	224,345	202,517	224,568	242,893	240,870	226,966	216,046	184,801	159,050
F_{Full}	0.105	0.093	0.118	0.094	0.1	0.08	0.09	0.092	0.129	0.171
Recruits (age 0)	145,750	360,860	569,175	256,961	119,279	138,889	64,735	118,918	124,873	106,037

Table 2: Comparison of biological reference points estimated in the previous assessment and from the current assessment update. An $F_{40\%}$ proxy was used for the overfishing threshold and SSB and MSY proxies were based on long-term stochastic projections.

	2021	2023
$F_{MSY} proxy$	0.200	0.190
SSB_{MSY} (mt)	90,019	78,593 (55,125 - 113,507)
MSY (mt)	12,671	11,959 (8,447 - 17,427)
Median recruits (age 1) (000s)	123,492	129,293
<i>Overfishing</i>	No	No
<i>Overfished</i>	No	No

Projections: Short term projections of catch (OFL) and Spawning Stock Biomass (SSB) were derived by sampling from an empirical cumulative distribution function of the time series of recruitment estimates from the ASAP model results for 1984-2022. The annual fishery selectivity, maturity ogive, and mean weights at age used in projections are the most recent 5 year averages; retrospective adjustments were applied in the projections.

Table 3: Short term projections of total fishery catch (OFL) and Spawning Stock Biomass (SSB) for Scup based on a harvest scenario of fishing at F_{MSY} proxy between 2024 and 2025. Catch in 2023 was assumed to be 13,458 (mt).

Year	Catch (mt)	SSB (mt)	F_{Full}
2023	13,458	209,407 (155,000 - 286,000)	0.115
2024	20,295	185,475 (138,000 - 252,000)	0.190
2025	18,363	162,716 (121,000 - 221,000)	0.190

Special Comments:

- What are the most important sources of uncertainty in this stock assessment? Explain, and describe qualitatively how they affect the assessment results (such as estimates of biomass, F, recruitment, and population projections).

Declining trends in growth rates and maturity at age may change the productivity of the stock and in turn affect estimates of the biological reference points. Changes in growth, maturity, and recruitment may be environmentally mediated but mechanisms are unknown.

- Does this assessment model have a retrospective pattern? If so, is the pattern minor, or major? (A major retrospective pattern occurs when the adjusted SSB or F_{Full} lies outside of the approximate joint confidence region for SSB and F_{Full} ; see Table ??).

The 7-year Mohn's ρ , relative to SSB, was -0.14 in the 2021 assessment and was -0.21 in 2022. The 7-year Mohn's ρ , relative to F, was 0.20 in the 2021 assessment and was 0.42 in 2022. There was a major retrospective pattern for this assessment because the ρ adjusted estimates of 2022 SSB ($SSB_{\rho}=193,087$) and 2022 F ($F_{\rho}=0.098$) were outside the approximate 90% confidence regions around SSB (131,720 - 192,050) and F (0.14 - 0.208). A retrospective adjustment was made for both the determination of stock status and for projections of catch and biomass in 2024 and 2025. The retrospective adjustment changed the 2022 SSB from 159,050 to 193,087 and the 2022 F_{Full} from 0.171 to 0.098.

- Based on this stock assessment, are population projections well determined or uncertain? If this stock is in a rebuilding plan, how do the projections compare to the rebuilding schedule?

Population projections for Scup are reasonably well determined.

- Describe any changes that were made to the current stock assessment, beyond incorporating additional years of data and the effect these changes had on the assessment and stock status.

No major changes, other than the addition of three years of data, were made to the Scup assessment for this update. Minor changes to the survey input CVs and fishery and survey input Effective Sample Sizes improved model diagnostics but had limited affects on the model results.

- If the stock status has changed a lot since the previous assessment, explain why this occurred.

As in recent assessments for Scup the stock status remains as not overfished and overfishing not occurring.

- Provide qualitative statements describing the condition of the stock that relate to stock status.

The current fishing mortality rate is relatively low, but recent below average recruitment has resulted in a decrease in SSB. SSB is projected to continue to decrease in the short term.

- Indicate what data or studies are currently lacking and which would be needed most to improve this stock assessment in the future.

The Scup assessment could likely be improved with more intensive sampling of the fishery catch.

- Are there other important issues?

Sufficient length and age sampling of the fishery catch needs to be maintained.

References:

NEFSC. 2022. Northeast Fisheries Science Center. Management Track Assessment June 2021. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 22-10; 79 p. <http://www.nefsc.noaa.gov/publications/crd/crd2210/>.

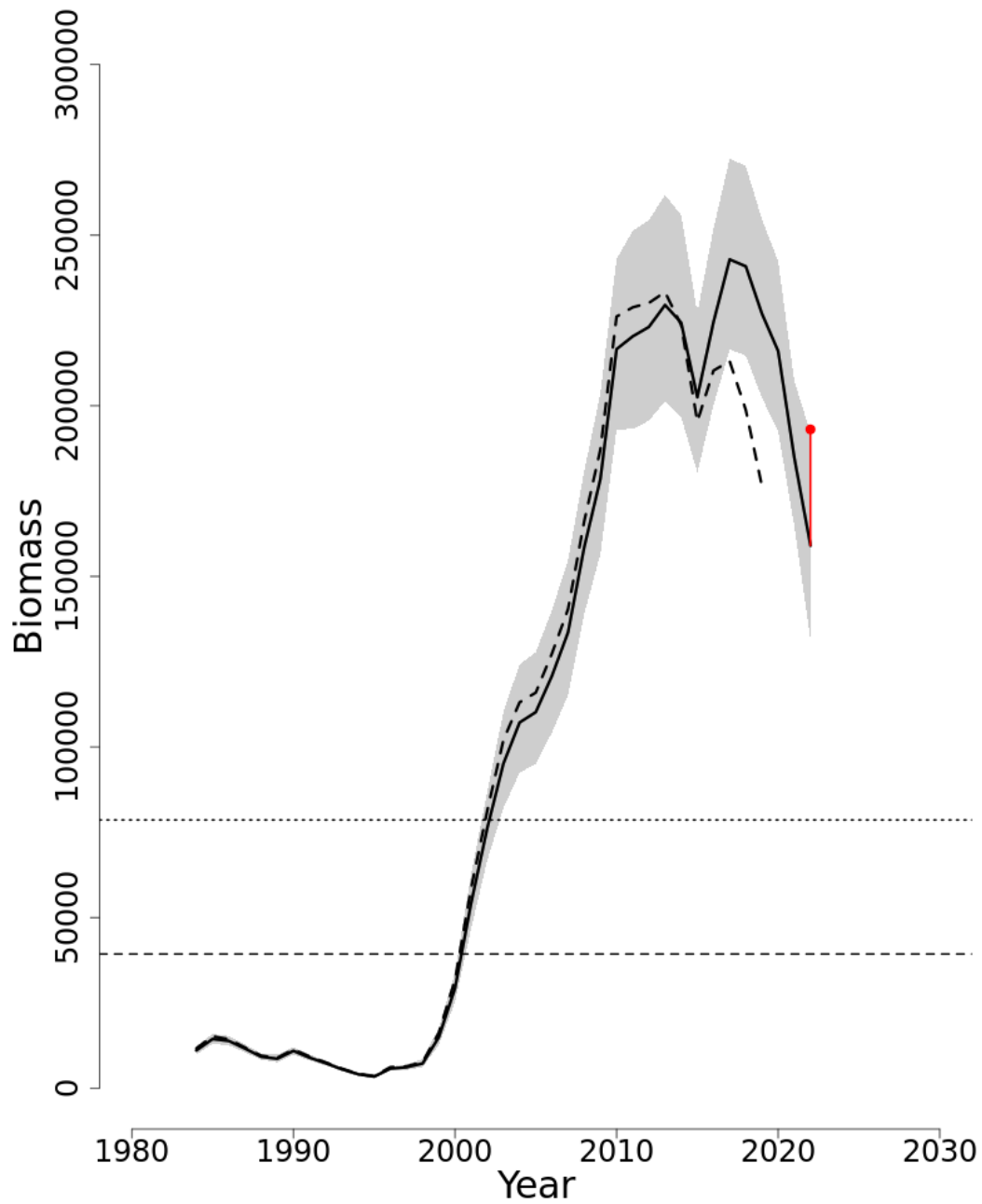


Figure 1: Trends in SSB of Scup between 1984 and 2022 from the current (solid line) and previous (dashed line) assessment and the corresponding $SSB_{Threshold}$ ($\frac{1}{2} SSB_{MSY}$ proxy; horizontal dashed line) as well as SSB_{Target} (SSB_{MSY} proxy; horizontal dotted line) based on the 2023 assessment. SSB was adjusted for a retrospective pattern and the adjustment is shown in red. The approximate 90% lognormal confidence intervals are shown.

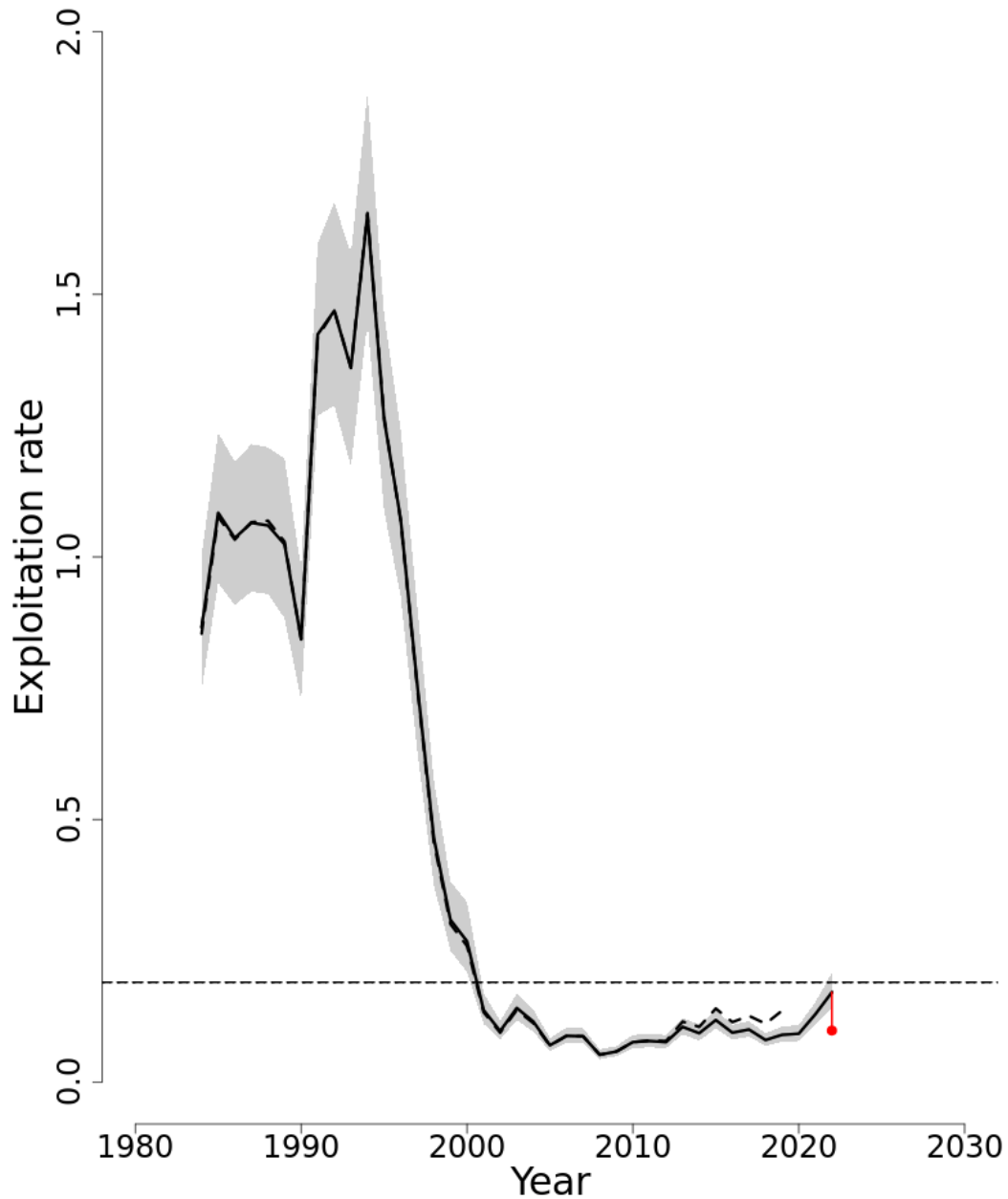


Figure 2: Trends in the fully selected fishing mortality (F_{Full}) of Scup between 1984 and 2022 from the current (solid line) and previous (dashed line) assessment and the corresponding $F_{Threshold}$ (F_{MSY} proxy=0.19; horizontal dashed line) based on the 2023 assessment. F_{Full} was adjusted for a retrospective pattern and the adjustment is shown in red. The approximate 90% lognormal confidence intervals are shown.

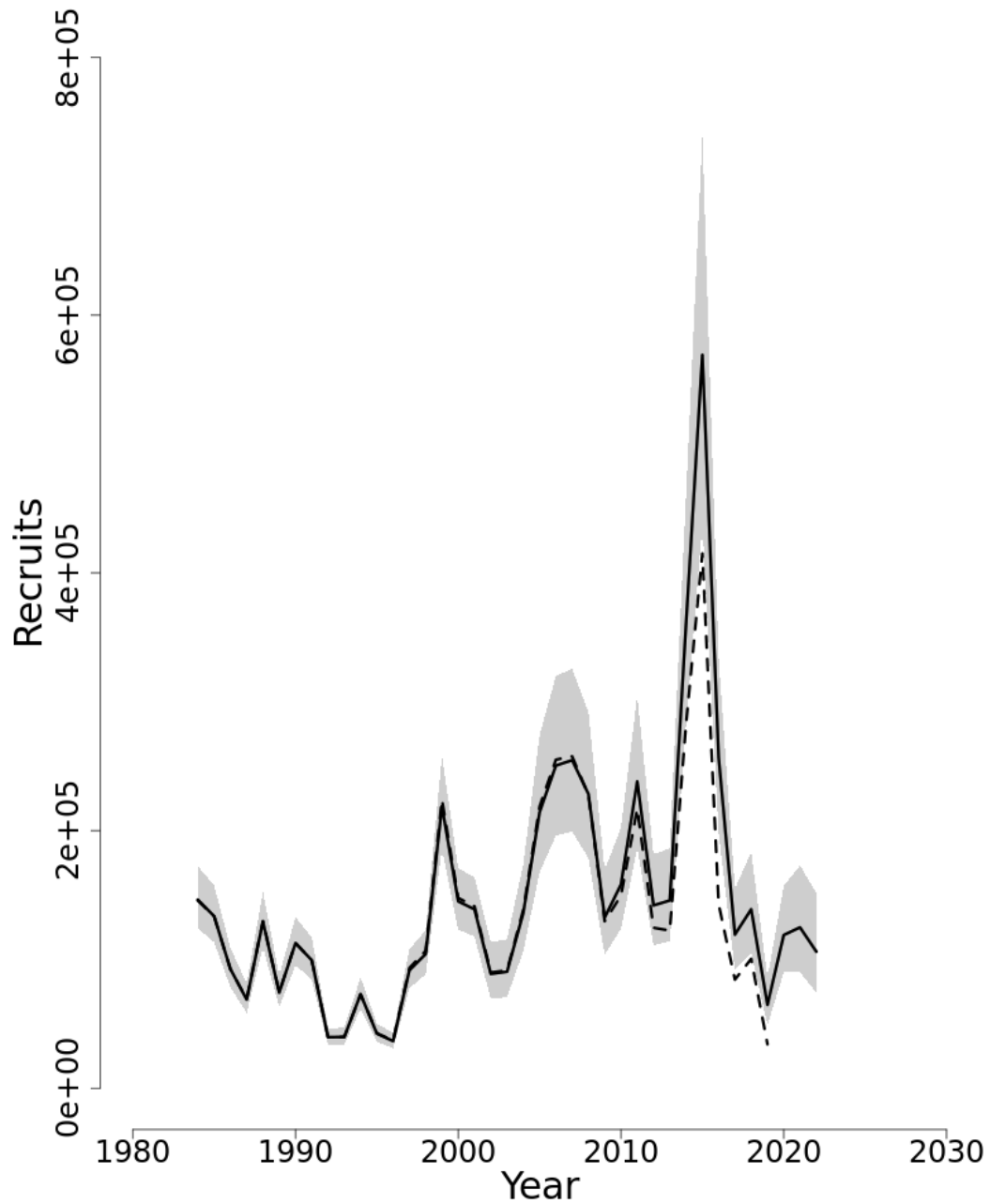


Figure 3: Trends in Recruits (age 0) (000s) of Scup between 1984 and 2022 from the current (solid line) and previous (dashed line) assessment.

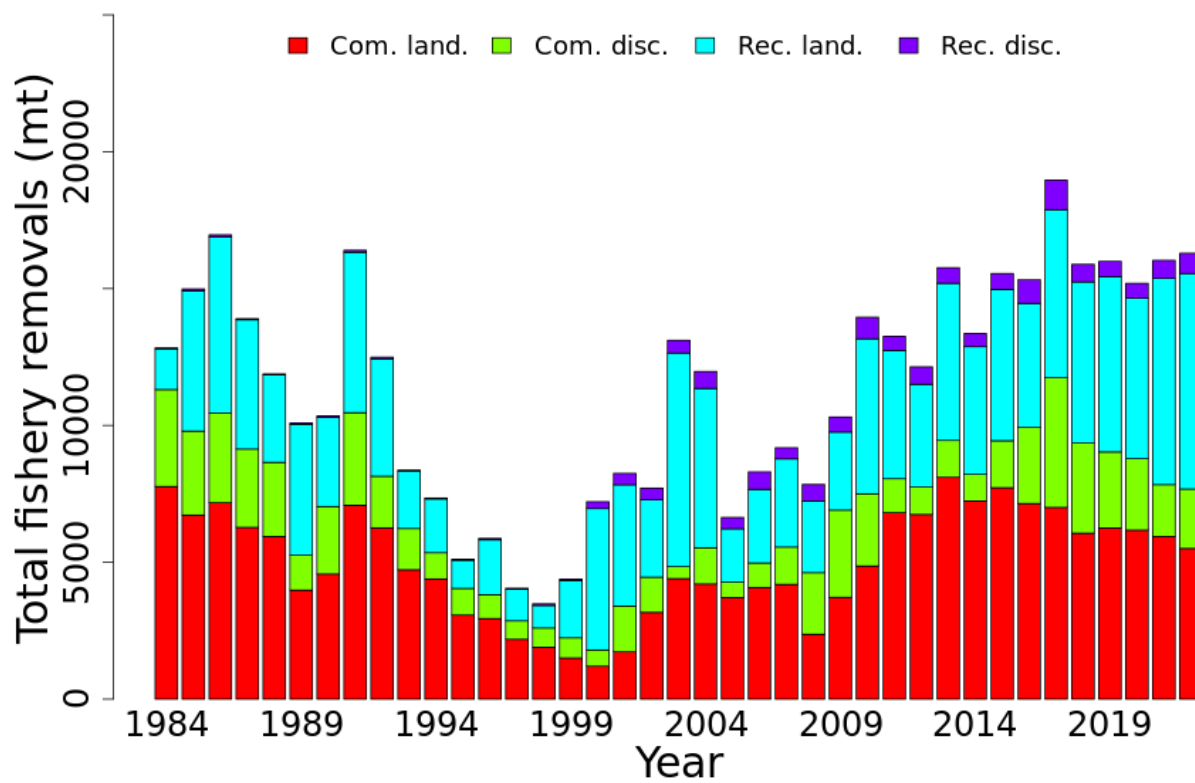


Figure 4: Total catch of Scup between 1984 and 2022 by fishery (commercial and recreational) and disposition (landings and discards).

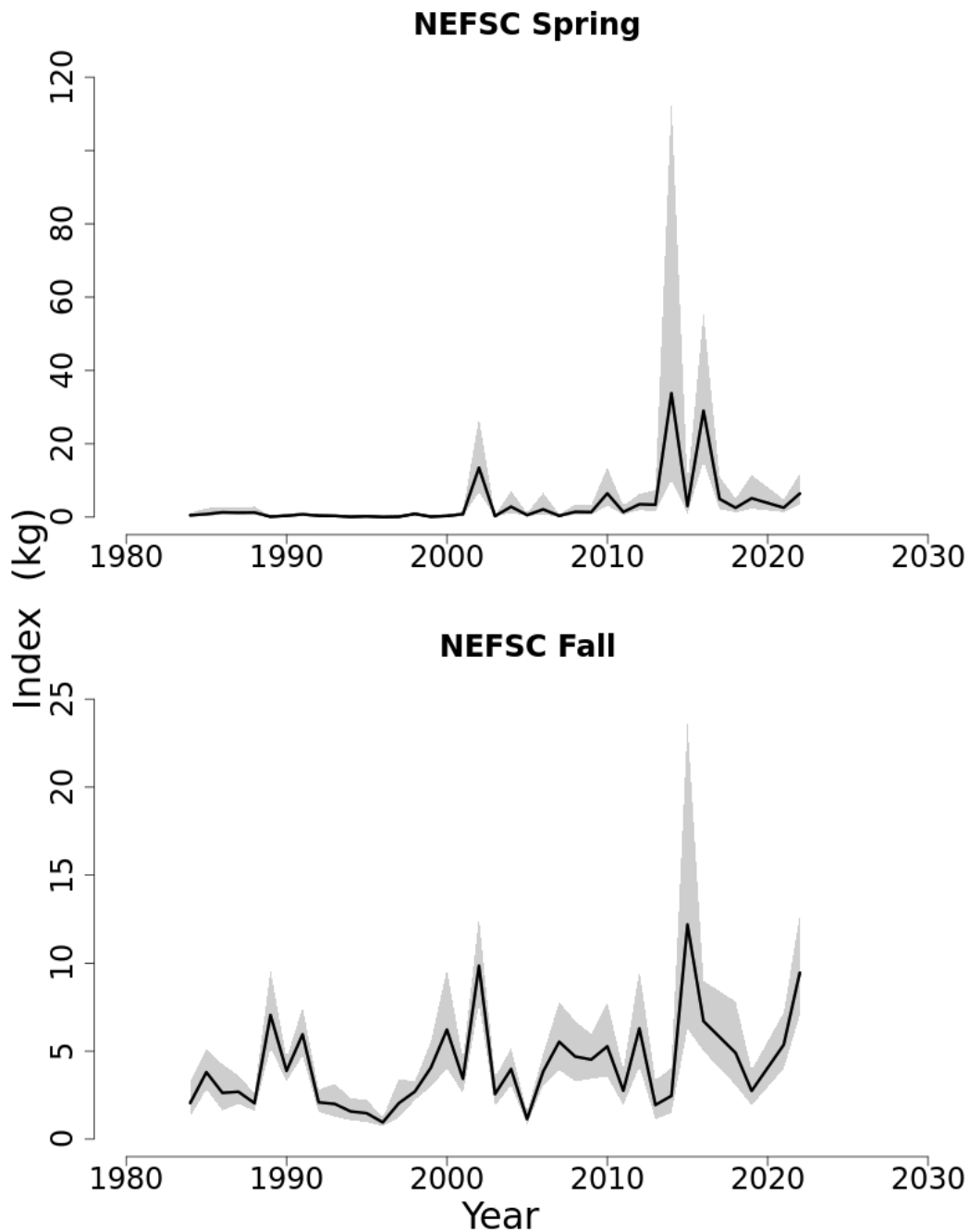


Figure 5: Indices of biomass for Scup between 1984 and 2022 for the Northeast Fisheries Science Center (NEFSC) spring and fall research bottom trawl survey series calibrated to FSV Albatross IV equivalents. The approximate 90% log-normal confidence intervals are shown.



Scup Fishery Information Document

June 2023

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for scup (*Stenotomus chrysops*) with an emphasis on 2022. Data Sources for Fishery Information Documents are generally from unpublished National Marine Fisheries Service (NMFS) dealer, vessel trip report (VTR), permit, catch accounting and monitoring system (CAMS), Northeast Fisheries Observer Program (NEFOP) data, and Marine Recreational Information Program (MRIP) databases and should be considered preliminary. For more resources on scup management, including previous Fishery Information Documents, please visit <http://www.mafmc.org/sf-s-bsb/>.

Key Facts:

- A 2021 management track assessment using data through 2019 indicated that the scup stock was not overfished, and overfishing was not occurring in 2019. An updated management track assessment will undergo peer review in late June 2023.
- Commercial landings decreased from 12.93 mil lbs. in 2021 to 12.12 mil lbs. in 2022.
- Price per pound and total ex-vessel value remained similar to 2021 and were about \$0.80 and \$9.68 million in 2022, respectively.
- Recreational landings increased from 16.62 mil lbs. in 2021 to 17.36 mil lbs. in 2022.
- The majority of scup harvested recreationally in 2022 was caught by private vessels (66%), followed by anglers fishing from shore (24%), and anglers fishing from for-hire vessels (9%).

Basic Biology

Scup are a schooling, demersal (i.e., bottom-dwelling) species. They are found in a variety of habitats in the Mid-Atlantic. Scup essential fish habitat includes demersal waters, areas with sandy or muddy bottoms, mussel beds, and sea grass beds from the Gulf of Maine through Cape Hatteras, North Carolina. Scup undertake extensive seasonal migrations between coastal and offshore waters. They are found in estuaries and coastal waters during the spring and summer. In the fall and winter, they move offshore and to the south, to outer continental shelf waters south off New Jersey. Scup spawn once annually over weedy or sandy areas, mostly off southern New England. Spawning takes place from May through August and usually peaks in June and July (Steimle et al., 1999).

About 50% of scup are sexually mature at two years of age and about 17 cm (about 7 inches) total length. Nearly all scup older than three years of age are sexually mature. Scup reach a maximum

age of at least 14 years. They may live as long as 20 years; however, few scup older than 7 years are caught in the Mid-Atlantic (NEFSC 2015).

Adult scup are benthic feeders. They consume a variety of prey, including small crustaceans (including zooplankton), polychaetes, mollusks, small squid, vegetable detritus, insect larvae, hydroids, sand dollars, and small fish. The Northeast Fisheries Science Center’s (NEFSC) food habits database lists several predators of scup, including several shark species, skates, silver hake, bluefish, summer flounder, black sea bass, weakfish, lizardfish, king mackerel, and monkfish (Steimle et al., 1999).

Status of the Stock

In June 2021, the NEFSC provided a management track assessment for scup which used commercial and recreational fishery data and fishery-independent survey data through 2019. Given data gaps for 2020 related to COVID-19 and the time required to address those gaps where possible, 2020 data could not be incorporated into this update.

The 2021 management track assessment indicates that the scup stock was not overfished and overfishing was not occurring in 2019 (Figures 1 and 2). Spawning stock biomass (SSB) was about 2 times the target level in 2019, and there was a notable increasing trend since the early 2000s; however, in recent years stock has declined (Table 1; Figure 1; NEFSC 2021)

Overfishing was not occurring in 2019. Fishing mortality in 2019 was 32% below the threshold level that defines overfishing (Figure 1). The 2015 year class (i.e., the scup spawned in 2015) is estimated to be the largest in the time series at 415 million fish, while the 2017-2019 year classes are estimated to be below average, with the 2019 year class representing the smallest in the time series (Figure 2; NEFSC 2021).

In 2022, the NEFSC provided a data update which included 2020 and 2021 landings information as well as NEFSC trawl survey data from 2021 through spring 2022 (2020-2021 dead discard estimates were not available at the time and no NEFSC trawl surveys were conducted in 2020 due to COVID). The NEFSC seasonal survey indices of scup had generally decreased since the 2015-2016 record highs. The spring survey index of scup stock biomass increased by 34% from 2019 to 2022; the fall index increased by 132% from 2019 to 2021. The NEFSC fall survey indices also suggest that a very large year class recruited to the stock in 2015 with below average recruitment during 2016-2021 (NEFSC 2022).

Note that updated stock assessment information will be available in late June/July 2023.

Table 1: Biomass and fishing mortality rate reference points and terminal year estimates for scup from the 2021 management track assessment.

	Spawning stock biomass	Fishing mortality rate (F)
Terminal year estimate (2019)	388 mil lbs. (176,404 mt)	0.136
Target	198.46 mil lbs. (90,019 mt)	N/A
Threshold	99.230 mil lbs. (45,010 mt)	0.200
Status	Not overfished	Not overfishing

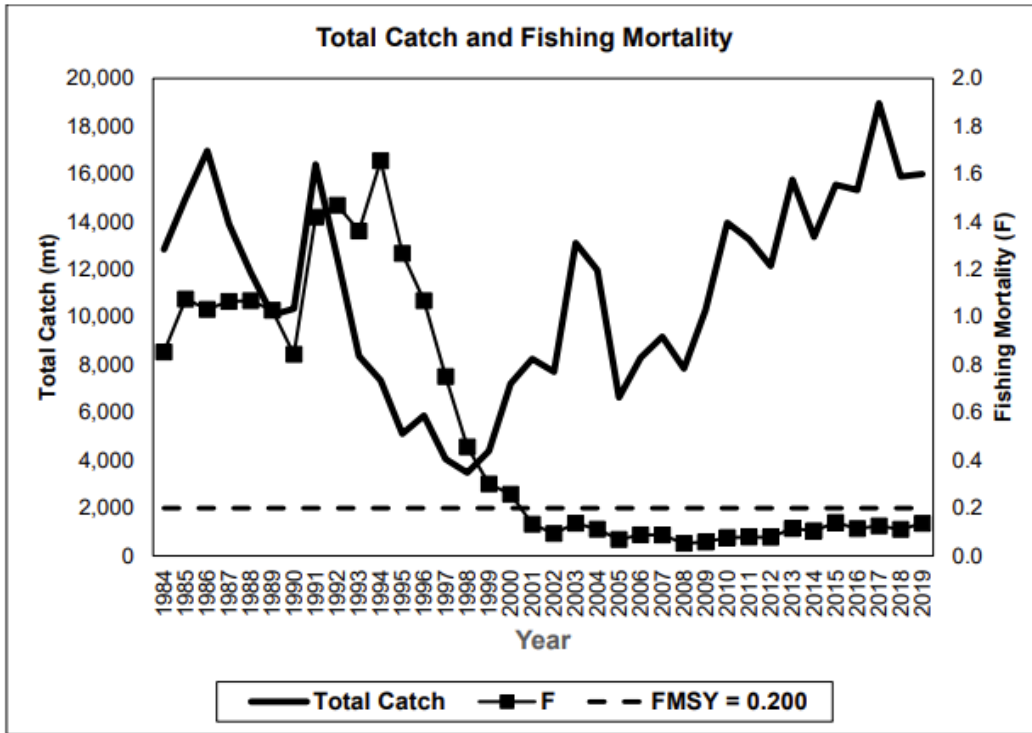


Figure 1:Total fishery catch and fishing mortality (F) for fully selected age 4 scup, 1984-2019. The horizontal dashed line is the fishing mortality reference point from the 2021 management track stock assessment. Overfishing is occurring when the fishing mortality rate exceeds this threshold. Source: NEFSC 2021.

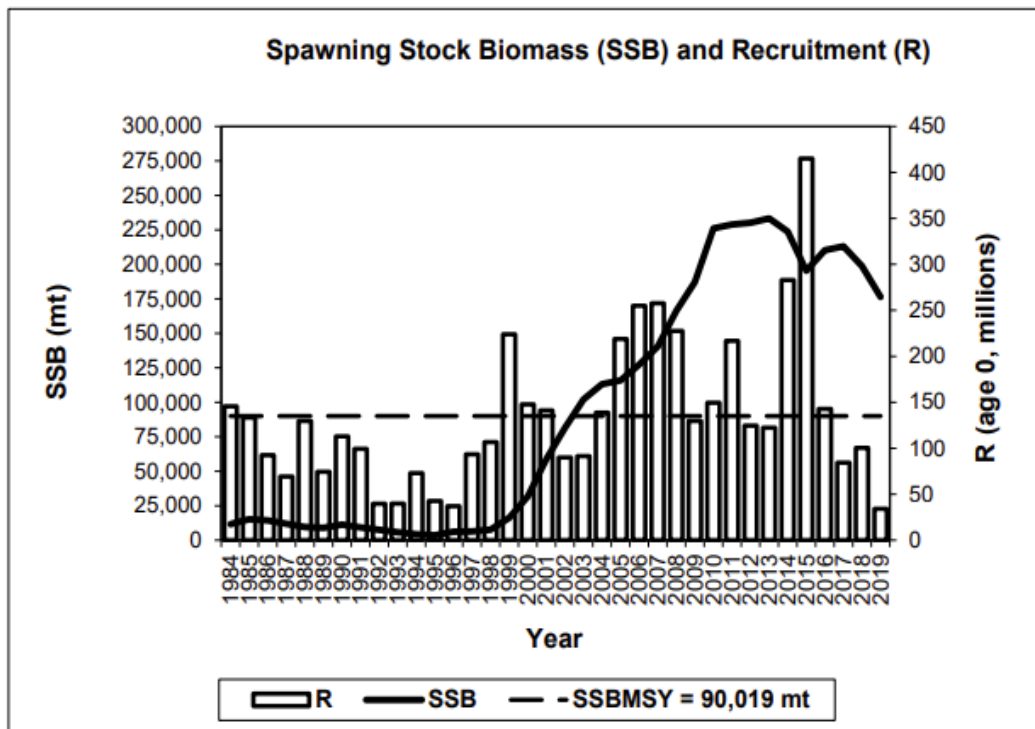


Figure 2: Scup spawning stock biomass and recruitment, 1984-2019. The horizontal dashed line is the biomass target. Source: NEFSC 2021.

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission) cooperatively develop fishery regulations for scup off the east coast of the United States. The National Marine Fisheries Service (NMFS) serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch is taken from both state waters (0-3 miles offshore) and federal waters (3-200 miles offshore). The management unit for scup includes U.S. waters from Cape Hatteras, North Carolina to the U.S./Canadian border.

The federal Fishery Management Plan (FMP) for scup has been in place since 1996, when scup were incorporated into the Summer Flounder FMP through Amendment 8. Amendment 8 established gear restrictions, reporting requirements, commercial quotas, a moratorium on new commercial scup permits, recreational possession limits, and minimum size restrictions for scup fisheries. The Council has made several adjustments to the FMP since 1996. The FMP and subsequent amendments and framework adjustments can be found at: www.mafmc.org/sf-s-bsb/.

The Council's Scientific and Statistical Committee (SSC) recommends annual Acceptable Biological Catch (ABC) levels for scup. The annual ABC is divided into commercial and recreational Annual Catch Limits (ACLs), based on the allocation percentages prescribed in the FMP. Through 2022 the allocation was 78% commercial, 22% recreational. Starting in 2023, the ABC is now allocated 65% to the commercial fishery and 35% to the recreational fishery. Both ABCs and ACLs are catch-based limits, meaning they account for both landings and discards. Projected discards are subtracted to determine the commercial quota and recreational harvest limit (RHL), which are landings-based limits.¹

Fishery Catch Summary

Table 2 shows scup total catch and catch limits from 2014 through 2023, as well as the overfishing limit (OFL) from which the ABC is derived. The ABC is set less than or equal to the OFL to account for scientific uncertainty. The OFL for scup was likely exceeded in 2022 (based on preliminary 2022 total catch estimates). The scup ABC was exceeded in 2017 and 2021, and likely again in 2022 (based on preliminary 2022 data; Table 2).

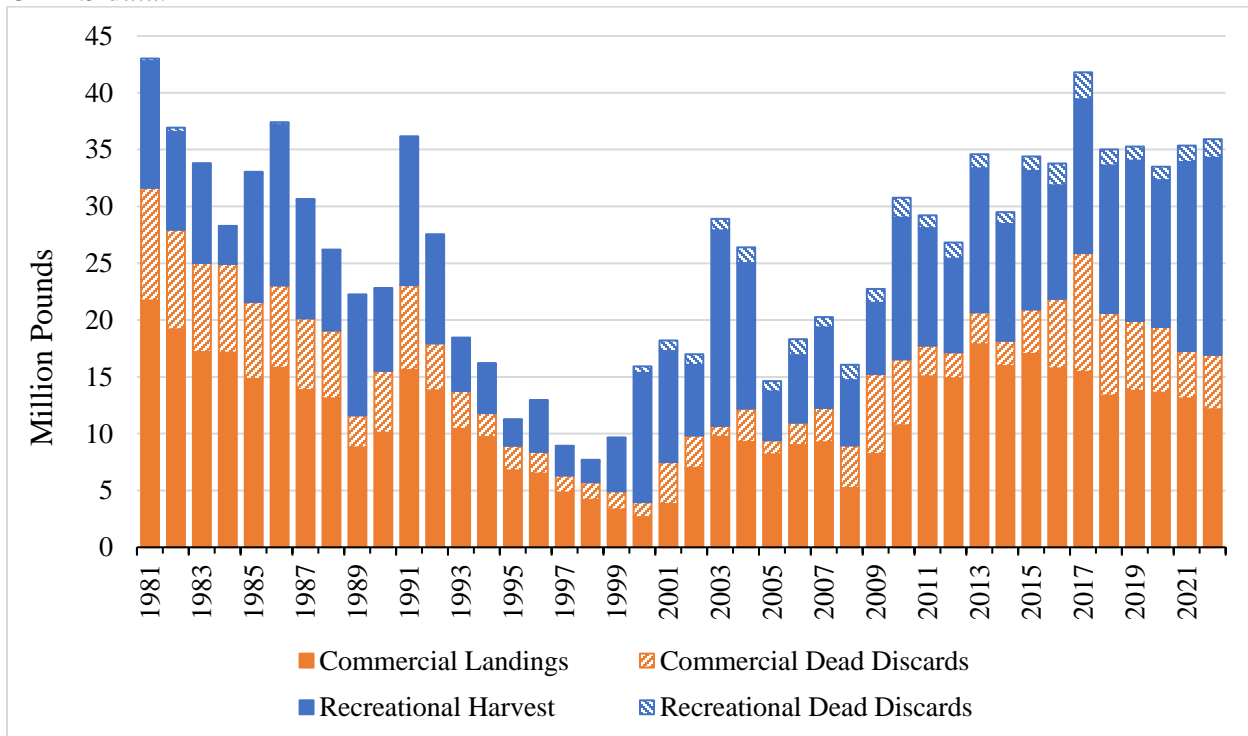
¹ For more information on these allocation revisions, see the fact sheet at: <https://www.mafmc.org/s/SFSBSB-Allocation-FAQs.pdf>.

Table 2: Total scup catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC. All values are in millions of pounds. Total catch calculations use “old” MRIP data through 2019, and “new” MRIP data for 2020-2022.

Year	Total catch ^a	OFL	OFL overage/underage	ABC	ABC overage/underage
2014	23.10	47.8	-52%	35.99	-36%
2015	25.85	47.8	-46%	33.77	-23%
2016	26.91	35.8	-25%	31.11	-14%
2017	32.20	32.09	0%	28.4	13%
2018	26.84	45.05	-40%	39.14	-31%
2019	26.55	41.03	-35%	36.43	-27%
2020	33.50	41.17	-19%	35.77	-6%
2021	35.35	35.3	0%	34.81	2%
2022	35.92	32.56	10%	32.11	12%
2023	--	30.09	--	29.67	--

^a See Table 3 and Table 13 for the commercial and recreational data contributing to the total catch estimates.

Figure 3: Shows commercial and recreational landings and dead discards from 1993 through 2022. Total (commercial and recreational combined) scup catch during this time period peaked in 1981 and 2017, and in recent years has remained relatively constant. Source: unpublished CAMS data.



Commercial Fishery

Commercial scup landings peaked in 1981 at 21.73 million pounds and reached a low of 2.66 million pounds in 2000 (Figure 3). In 2022, commercial fishermen landed 12.12 million pounds of scup, about 59% of the commercial quota. Commercial catch has not exceeded the commercial ACL since 2017. Where commercial ACL overages have occurred, they are generally caused by higher-than-expected dead discards, as commercial fishery landings for scup are typically well controlled to the commercial quota (Table 3).

Table 3: Scup commercial landings, dead discards, and catch compared to the commercial quota and commercial ACL, 2014-2023. All values are in millions of pounds.

Year	Com. landings ^a	Com. quota	Quota overage/ underage	Com. dead discards ^a	Com. catch ^a	ACL	ACL overage/ underage
2014	15.96	21.95 ^b	-27%	2.16	18.12	28.07	-35%
2015	17.03	21.23	-20%	3.79	20.82	26.35	-21%
2016	15.76	20.47	-23%	6.12	21.88	24.26	-10%
2017	15.45	18.38	-16%	10.43	25.88	22.15	+17%
2018	13.37	23.98	-44%	7.26	20.63	30.53	-32%
2019	13.78	23.98	-43%	6.13	19.91	28.42	-30%
2020	13.58	22.23	-39%	5.76	19.34	27.9	-31%
2021	12.93	20.5	-37%	4.18	17.11	27.15	-37%
2022	12.12	20.38	-41%	4.79	16.91	25.05	-33%
2023	--	14.01	--	--	--	19.29	--

^a Commercial landings based on NMFS dealer data; commercial dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

^b The 2014 commercial quota was adjusted for Research Set Aside (RSA). Quotas for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014. Commercial quotas also reflect deductions from prior year landings overages and discard-based Accountability Measures.

In 2022, about 4.79 million pounds of scup were discarded in commercial fisheries, representing a 12% increase from 2021. Commercial discards increased from 2014-2017, peaking at about 10.42 million pounds in 2017. This was the highest number of discards since 1981 and was likely attributed to the large 2015-year class, which was the largest year class since 1984. In 2017, these scup were very abundant, but mostly too small to be landed in the commercial fishery due to the commercial minimum fish size of 9 inches total length. Since 2017, commercial discards have decreased but have remained higher than years prior to 2015 (Figure 3; Table 3).

The commercial scup fishery operates year-round, taking place mostly in federal waters during the winter and mostly in state waters during the summer. A coast-wide commercial quota is allocated between three quota periods, known as the winter I, summer, and winter II quota periods. These seasonal quota periods were established to ensure that both smaller day boats, which typically operate near shore in the summer months, and larger vessels operating offshore in the winter months can land scup before the annual quota is reached. The dates of the summer and winter II periods were modified in 2018 (Table 4). Both winter periods are managed under a coastwide quota while the summer period quota is divided among states according to the allocation percentages outlined in the Commission's FMP (Table 5).

Table 4: Dates, allocations, and possession limits for the commercial scup quota periods. Winter period possession limits apply in both state and federal waters.

Quota Period	Dates	Commercial quota allocated (%)	Possession limit
Winter I	January 1 – April 30	45.11%	50,000 pounds, until 80% of winter I allocation is reached, then reduced to 1,000 pounds.
Summer	May 1 – September 30 ^a	38.95%	State-specific
Winter II	October 1 – December 31 ^a	15.94%	12,000 pounds. If winter I quota is not reached, the winter II possession limit increases by 1,500 pounds for every 500,000 pounds of scup not landed during winter I.

^a Prior to 2018, the summer period was May 1 - October 31 and the winter II period was November 1 - December 31, with the same allocations as shown above.

Table 5: State-by-state quotas for the commercial scup fishery during the summer quota period (May-September).

State	Share of summer quota
Maine	0.1210%
Massachusetts	21.5853%
Rhode Island	56.1894%
Connecticut	3.1537%
New York	15.8232%
New Jersey	2.9164%
Maryland	0.0119%
Virginia	0.1650%
North Carolina	0.0249%
Total	99.9908%

Once the quota for a given period is reached, the commercial fishery is closed for the remainder of that period. If the full winter I quota is not harvested, unused quota is added to the winter II period. Any quota overages during the winter I and II periods are subtracted from the quota allocated to those periods in the following year. Quota overages during the summer period are subtracted from the following year's quota only in the states where the overages occurred.

A possession limit of 50,000 pounds is in effect during the winter I quota period. A possession limit of 12,000 pounds is in effect during the winter II period. If the winter I quota is not reached, the winter II possession limit increases by 1,500 pounds for every 500,000 pounds of quota not caught during winter I. During the summer period, various state-specific possession limits are in effect.

The commercial scup fishery in federal waters is predominantly a bottom otter trawl fishery. In 2022, 96% of the commercial scup landings (by weight) reported by federal VTR data were caught with bottom otter trawls. Pots/traps accounted for about 3% of landings, while all other gear types accounted for less than 1% of the 2022 commercial scup landings.

Prior to 2019, trawl vessels could not possess 1,000 pounds or more of scup during October - April, or 200 pounds or more during May - September, unless they use a minimum mesh size of 5-inch diamond mesh, applied throughout the codend for at least 75 continuous meshes forward of the terminus of the net. In 2019, another threshold period was added from April 15-June 15 with a 2,000-pound possession limit to allow for higher retention in the small-mesh squid fishery. Pots and traps for scup are required to have degradable hinges and escape vents that are either circular with a 3.1-inch minimum diameter or square with a minimum length of 2.25 inches on the side.

VTR data suggests that NMFS statistical areas 613, 537, 616, 539 and 611 were responsible for the largest percentage of commercial scup catch in 2022. Statistical area 539, off Rhode Island, had the highest number of trips which caught scup; however, statistical area 613 off of Long Island, NY accounted for the greatest amount of scup caught (Table 6, Figure 4).

Table 6: Statistical areas which accounted for greater than 5% of the total commercial scup catch (by weight based on VTR data) in 2022, with associated number of trips. Federal VTR data do not capture landings by vessels only permitted to fish in state waters.

Statistical area	Percentage of 2022 commercial scup catch	Number of trips
613	24%	1,377
537	20%	1,066
616	16%	346
539	10%	2,108
611	6%	1,139

2022 Commercial Scup Catch - VTRs

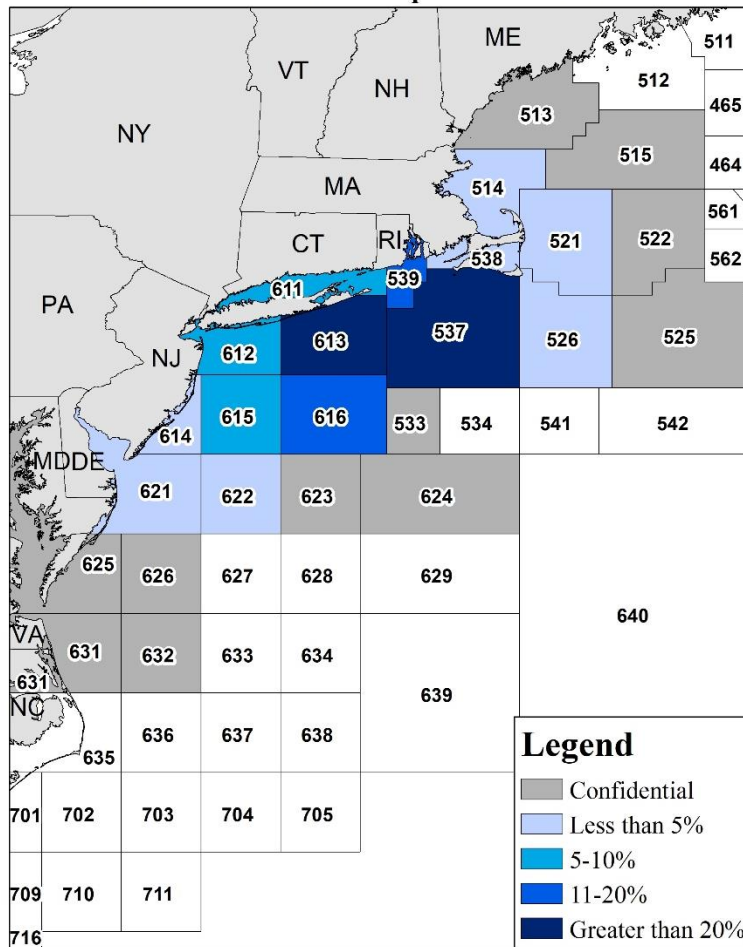


Figure 4: Proportion of scup catch by statistical area in 2022 based on federal VTR data. Statistical areas marked “confidential” are associated with fewer than three vessels and/or dealers. The amount of catch (landings and discards) that was not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

Over the past two decades, total scup ex-vessel revenue ranged from a low of \$5.39 million in 2001 to a high of \$13.77 million in 2015. In 2022, 12.12 million pounds of scup were landed by commercial fishermen from Maine through North Carolina. Total ex-vessel value in 2022 was \$9.68 million, resulting in an average price per pound of \$0.80 (Figure 5). All revenue and price values were adjusted to 2022 dollars to account for inflation.

In general, the price of scup tends to be lower when landings are higher, and vice versa (Figure 5). This relationship is not linear and many other factors besides landings likely influence price. The highest average price per pound over the past two plus decades was \$2.47 and occurred in 1998. The lowest average price per pound was \$0.69 and occurred in 2013.

Over 122 federally permitted dealers from Maine through North Carolina purchased scup in 2022. More dealers in New York purchased scup than in any other state (Table 7).

At least 100,000 pounds of scup were landed by commercial fishermen in 15 ports in 6 states in 2022. These ports accounted for approximately 92% of all 2022 commercial scup landings. Point

Judith, Rhode Island was the leading port, both in terms of landings and number of vessels landing scup (Table 8). Detailed community profiles developed by the Northeast Fisheries Science Center’s Social Science Branch can be found at www.mafmc.org/communities/.

Since 1996, a moratorium permit has been required to fish commercially for scup. In 2022, 603 vessels held commercial moratorium permits for scup.

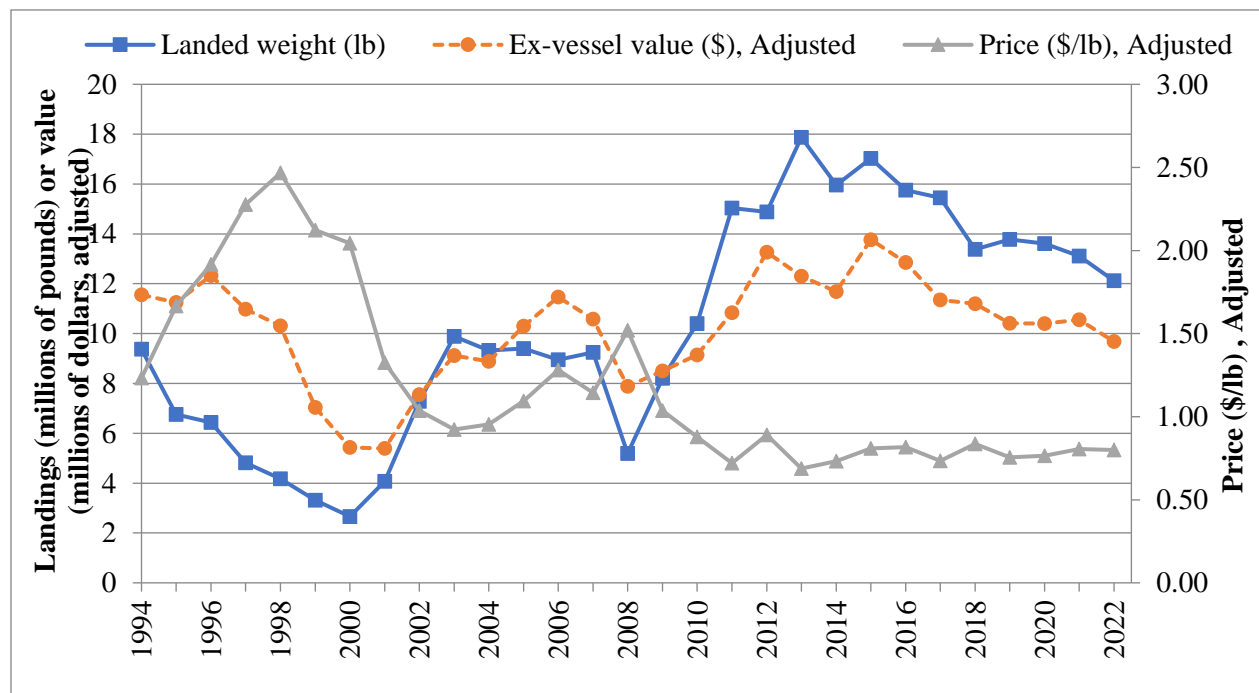


Figure 5: Landings, ex-vessel value, and price for scup from Maine through North Carolina, 1994-2022. Ex-vessel value and price are inflation-adjusted by the Gross Domestic Product Price Deflator indexed for 2022 (<https://fred.stlouisfed.org>). Source: NMFS unpublished dealer data.

Table 7: Number of dealers per state which reported purchases of scup in 2022.

State	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of Dealers	31	30	13	45	15	3	5	5	8

Table 8: Ports reporting at least 100,000 pounds of scup landings in 2020, based on NMFS dealer data. C = Confidential. Source: NMFS Unpublished dealer data.

Port	Scup landings (lbs.)	% of total landings	Number of vessels
POINT JUDITH, RI	3,203,618	26%	125
MONTAUK, NY	2,802,648	23%	79
PT. PLEASANT, NJ	1,397,265	12%	30
CAPE MAY, NJ	964,646	8%	24
NEW BEDFORD, MA	712,476	6%	48
MATTITUCK, NY	C	C	C
NEW LONDON, CT	263,461	2%	4
STONINGTON, CT	229,225	2%	18
HAMPTON BAY, NY	224,861	2%	22
LITTLE COMPTON, RI	198,676	2%	9
EAST HAVEN, CT	134,752	1%	4
SHINNECOCK, NY	129,546	1%	16
GREENPORT, NY	124,745	1%	3
AMAGANSETT, NY	C	C	C
NEWPORT NEWS, VA	102,276	1%	14

The top non-target species in the commercial scup fishery were identified based on raw data from Northeast Fisheries Observer Program (NEFOP) observed trips from 2017-2022 where scup made up at least 75% of the landings by weight. Using this definition of a directed trip, the most common non-target species in the scup fishery include spiny dogfish, northern sea robin, little skate, summer flounder, and black sea bass (Table 9).

Table 9: Percent of non-target species caught in observed trawls where summer flounder made up at least 75% of the observed landings, 2017-2022. Only those non-target species comprising at least 1% of the aggregate non-target catch are listed.

Species	% of total catch on scup observed directed trips, 2017-2022 ^a
DOGFISH, SPINY	8.3%
SEA ROBIN, NORTHERN	3.6%
SKATE, LITTLE	3.1%
FLOUNDER, SUMMER (FLUKE)	2.6%
SEA BASS, BLACK	2.5%
HAKE, SILVER (WHITING)	1.2%
SKATE, WINTER (BIG)	1.0%
DOGFISH, SMOOTH	1.0%

^a Percentages shown are aggregate totals over 2017-2022 and do not reflect the percentages of non-target species caught on individual trips. This analysis describes only observed trips and has not been expanded to the fishery as a whole.

Scup Gear Restricted Areas

Two scup gear restricted areas (GRAs) were first implemented in 2000 with the goal of reducing scup discards in small-mesh fisheries. The GRA boundaries have been modified multiple times since their initial implementation. The current boundaries are shown in Figure 6: The Scup Gear Restricted Areas. Trawl vessels may not fish for or possess longfin squid, black sea bass, or silver hake in the Northern GRA from November 1 – December 31 and in the Southern GRA from January 1 – March 15 unless they use mesh which is at least 5 inches in diameter. The GRAs are thought to have contributed to the recovery of the scup population in the mid- to late-2000s (Terceiro and Miller, 2014). As previously stated, commercial scup discards increased by 71% between 2016 and 2017, likely due to the large 2015-year class (NEFSC 2021). Although discards decreased by about 43% in 2022 compared with the record high discards in 2017, they remain above the total average annual discards from 2003-2022.

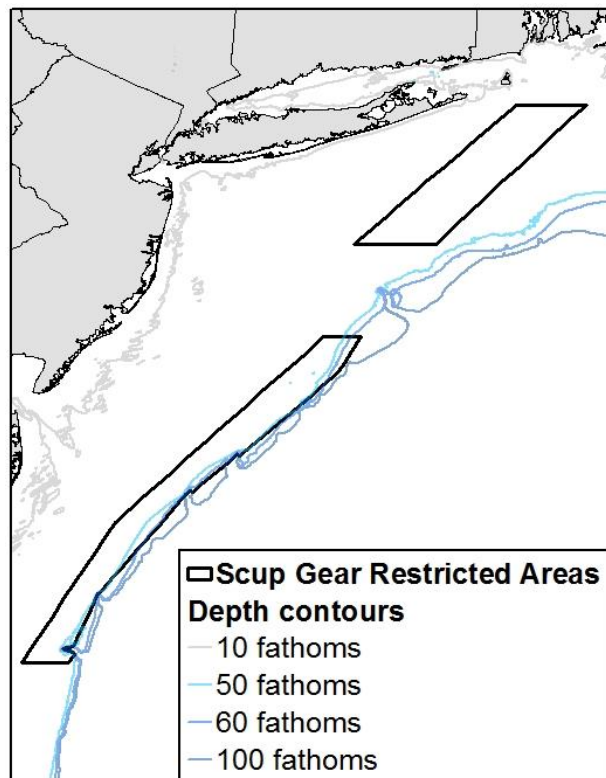


Figure 6: The Scup Gear Restricted Areas.

Recreational Fishery

The recreational scup fishery is managed on a coastwide basis in federal waters. Federal waters measures remained unchanged from 2015-2021, then in 2022 a 1-inch increase to the scup recreational minimum size was implemented (Table 10). A new approach for setting recreational management measures, referred to as the Percent Change Approach, was used to set scup measures in 2023.² This approach required a 10% reduction in expected harvest in 2023. The Council and Commission proposed decreasing the recreation possession limit from 50 to 40 fish per person and modifying the season from open year-round to May 1 – December 31. Given these changes were not expected to achieve the full reduction in harvest required, the Council and Commission also agreed states would further modify state measures through the commission process to achieve the full coastwide harvest reduction required.

The Commission applies 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. The minimum fish size, possession limit, and open season for recreational scup fisheries in state waters vary by state. State waters measures remained unchanged from 2015 through 2017. Massachusetts through New Jersey liberalized their minimum size limits and/or seasons in 2018 compared to 2017, there were very minor changes in the state regulations from 2018 to 2019, and no changes to state measures from 2019 to 2021. In 2022, the scup recreational minimum size limit was increased by 1-inch in state waters of all states (Table 11). State measures were changed again in 2023, and measured changed varies by state (Table 12).

Table 10: Federal recreational measures for scup, 2005-2023.

Regulation	2005-2007	2008-2009	2010-2011	2012	2013	2014	2015-2021	2022	2023^a
Minimum size (total length)	10 in.	10.5 in.	10.5 in.	10.5 in.	10 in.	9 in.	9 in.	10 in.	10 in.
Possession limit	50	15	10	20	30	30	50	50	40
Open season	Jan 1 – Feb 28 & Sept 18 – Nov 30	Jan 1 – Feb 28 & Oct 1 – Oct 31	Jun 6 – Sept 26	Jan 1 – Dec 31	Jan 1 – Dec 31	Jan 1 – Dec 31	Jan 1 – Dec 31	Jan 1 – Dec 31	May 1 – Dec 31

^a Implementation pending final rule (*as of 6/13/2023*).

² More information on the Percent Change Approach is available at <https://www.mafmc.org/newsfeed/2022/mafmc-amp-asmfc-take-first-step-toward-recreational-management-reform-for-bluefish-summer-flounder-scup-and-black-sea-bass>

Table 11: State recreational fishing measures for scup in 2022.

State	Minimum Size (inches)	Possession Limit	Open Season
MA (private & shore)	10	30 fish; 150 fish/vessel with 5+ anglers on board	April 13-December 31
MA (party/charter)	10	30 fish	April 13-April 30; July 1- December 31
		50 fish	May 1-June 30
RI (private & shore)	10	30 fish	January 1-December 31
RI shore program (7 designated shore sites)	9		
RI (party/charter)	10	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1-October 31
CT (private & shore)	10	30 fish	January 1-December 31
CT shore program (45 designed shore sites)	9		
CT (party/charter)	10	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1-October 31
NY (private & shore)	9	30 fish	January 1-December 31
NY (party/charter)	9	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1- October 31
NJ	10	50 fish	January 1- December 31
DE	9	50 fish	January 1-December 31
MD		30 fish	
VA		50 fish	
NC, North of Cape Hatteras (N of 35° 15'N)		50 fish	

Table 12: State recreational fishing measures for scup in 2023.

State	Minimum Size (inches)	Possession Limit	Open Season
MA (private vessel)	10.5	30 fish	May 1 – December 31
MA (shore)	9.5		
MA (party/charter)	10.5	40 fish	May 1 – June 30
		30 fish	July 1 – December 31
RI (private vessel)	10.5	30 fish	May 1 – December 31
RI (shore)	9.5		
RI (party/charter)	10.5“	30 fish	May 1 – August 31; November 1 – December 31
		40 fish	September 1 – October 31
CT (private vessel)	10.5	30 fish	May 1 – December 31
CT (shore)	9.5		
CT (Authorized For-Hire Monitoring Program Vessels)	10.5	30 fish	May 1 – August 31; November 1 – December 31
		40 fish	September 1 – October 31
NY (private vessel)	10.5	30 fish	May 1 – December 31
NY (shore)	9.5		
NY (party/charter)	10.5	30 fish	May 1 – August 31; November 1 – December 31
		40 fish	September 1 – October 31
NJ	10	30 fish	August 1 – December 31
DE	9	40 fish	January 1 – December 31
MD		30 fish	
VA		30 fish	
NC, North of Cape Hatteras (N of 35° 15’N)		40 fish	

From 1981-2022, MRIP estimates indicate that recreational catch of scup (in number of fish) peaked in 2017 at 41.20 million scup and landings peaked in 1986 with an estimated 30.43 million scup landed by recreational fishermen from Maine through North Carolina. Recreational catch was lowest in 1998 when an estimated 6.86 million scup were caught and 2.74 million scup were landed. In 2022, recreational anglers from Maine through North Carolina caught an estimated 36.47 million scup and landed 18.04 million scup (about 17.36 million pounds; Figure 7; Table 13).

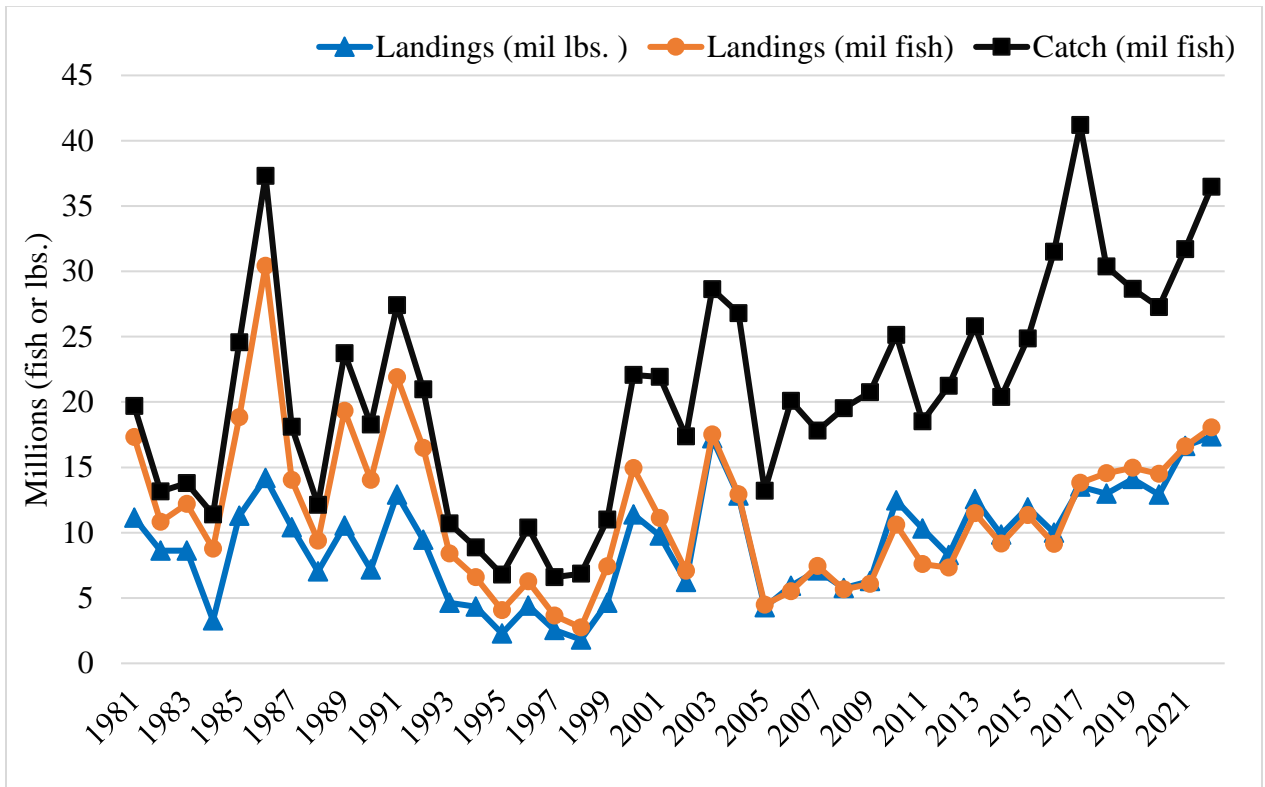


Figure 7: MRIP estimates of recreational scup landings in numbers of fish and pounds and catch in numbers of fish, ME - NC, 1981-2022.

Table 13: Scup recreational landings, dead discards, and catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Information is provided in the “old” MRIP units for 2014-2019, and in the “new” MRIP units for 2020-2022. For scup, 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	Version of MRIP data used	Rec. landings ^a	RH L	RHL over/under	Rec. dead disc. ^a	Rec. catch	ACL	ACL over/under
2014	Old MRIP (pre-revision)	4.43	7.03	-37%	1.06	5.49	7.92	-31%
2015		4.41	6.8	-35%	1.28	5.69	7.43	-23%
2016		4.26	6.09	-30%	1.90	6.16	6.84	-10%
2017		5.42	5.5	-1%	2.38	7.80	6.25	+25%
2018		5.61	7.37	-24%	1.42	7.03	8.61	-18%
2019	Old MRIP (provided by NEFSC)	5.41	7.37	-27%	1.23	6.64	8.01	-17%
2020 ^c	New MRIP (post-revision)	12.91	6.51	+98%	1.19	14.10	7.87	+79%
2021		16.62	6.07	+174%	1.44	18.06	7.66	+136%
2022		17.36	6.08	+186%	1.63	18.99	7.06	+169%
2023		--	9.27	--	--	--	10.39	--

^a Recreational harvest data from MRIP; recreational dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

^b For 2014, the RHL was adjusted for Research Set Aside (RSA). RHLs for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

^c Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to COVID-19. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019. For scup, the 2020 harvest estimate relied on approximately 25% imputed data. For more information on imputation methods see: <https://www.mafmc.org/s/1-2020-Marine-Recreational-Catch-Estimates-QA-52121.pdf>.]

Vessels carrying passengers for hire in federal waters must obtain a federal party/charter permit. In 2022, 828 vessels held scup federal party/charter permits. Many of these vessels also held party/charter permits for summer flounder and black sea bass.

Most recreational scup catch occurs in state waters during the warmer months when the fish migrate inshore. Between 2020 and 2022, on average 94% of recreational scup catch (in numbers of fish) occurred in state waters and about 6% occurred in federal waters (Table 14). New York, Connecticut, Rhode Island, Massachusetts, and New Jersey accounted for over 99% of recreational scup harvest in 2022 (Table 15).

About 66% of recreational scup landings (in numbers of fish) in 2022 were from anglers who fished on private or rental boats and about 24% were from anglers fishing from shore. Additionally, about 9% were from anglers fishing on party or charter boats (Table 16).

Table 14: Estimated percent of scup landed by recreational fishermen in state and federal waters, Maine – North Carolina, 2013 – 2022. Percentages calculated based on numbers of fish.

Source: NMFS unpublished MRIP data.

Year	State waters	Federal waters
2013	95%	5%
2014	97%	3%
2015	99%	1%
2016	95%	5%
2017	97%	3%
2018	96%	4%
2019	97%	3%
2020	90%	10%
2021	96%	4%
2022	97%	3%
2013-2022 average	96%	4%
2020-2022 average	94%	6%

Table 15: Estimated percent of scup harvested by state, 2019 – 2022. Percentages calculated based on numbers of fish. Source: NMFS unpublished MRIP data.

State	2020	2021	2022	2020-2022 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	9%	22%	12%	15%
Rhode Island	11%	17%	16%	15%
Connecticut	25%	17%	10%	18%
New York	49%	42%	59%	50%
New Jersey	6%	1%	1%	3%
Delaware	0%	0.01%	0.01%	0.01%
Maryland	0%	0%	0.01%	0.01%
Virginia	0%	0.8%	0%	0.3%
North Carolina	0.01%	0.02%	0.02%	0.01%

Table 16: Proportion of scup harvest (calculated based on numbers of fish) by recreational fishing mode, Maine - North Carolina, 2013 – 2022. Note: percentages may not sum to 100% due to rounding. Source: NMFS unpublished MRIP data.

Year	Private/rental	Shore	Party/charter	Total number (number of fish)
2013	52%	34%	15%	11,487,157
2014	67%	20%	12%	9,164,521
2015	77%	17%	6%	11,330,115
2016	56%	34%	10%	9,143,577
2017	65%	24%	11%	13,820,251
2018	48%	43%	9%	14,545,138
2019	56%	29%	15%	14,952,142
2020	62%	28%	10%	14,491,967
2021	73%	18%	9%	16,592,493
2022	66%	24%	9%	18,038,052
2013-2022 average	62%	27%	11%	13,356,541
2020-2022 average	67%	23%	10%	16,374,171

The top non-target species in the recreational fishery were identified by a species guild approach that identifies species with the strongest associations on recreational trips from 2017-2021 (2021 MRIP data used here were preliminary and excluded wave 6). Black sea bass, sea robins, summer flounder, bluefish, and tautog were highly correlated with recreational scup catch. (J. Brust, personal communication March 2022).

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Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 26, 2023
To: Council and Board
From: Hannah Hart, Staff
Subject: 2023 Commercial Scup Discards Report and Gear Restricted Area Analysis

On Tuesday, August 8, the Council and Board will discuss the commercial scup discard report and Gear Restricted Area (GRA) analysis and consider recommended next steps for continuing to minimize scup discards to the extent practicable. Materials listed below are provided for the Council and Board's consideration of this agenda item.

- 1) 2023 Draft Commercial Scup Discards Report and Gear Restricted Area (GRA) Analysis

To be posted separately once available:

- 1) Summer Flounder, Scup, and Black Sea Bass Monitoring Committee meeting summary from July 27, 2023

*2023 Draft Commercial Scup Discards Report and
Gear Restricted Area (GRA) Analysis*

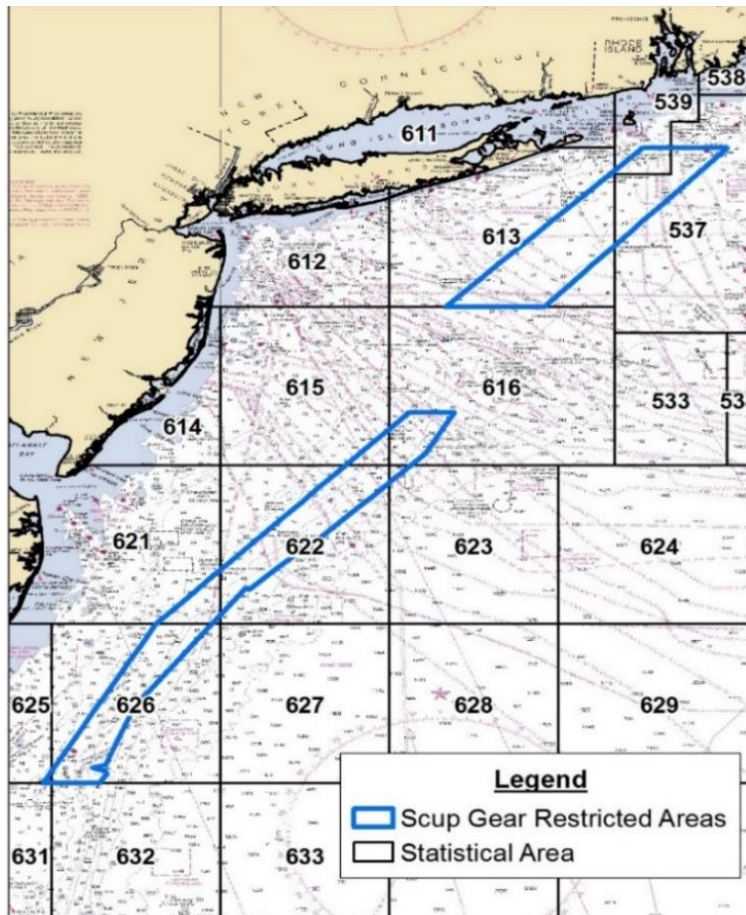


Figure 1: Scup GRAs (Northern and Southern) and NMFS statistical areas

Purpose

This document addresses the Council’s [2023 Proposed Actions and Deliverables](#) item “Evaluate commercial scup discards and gear restricted areas.” Specifically, it **A)** describes scup discard estimation, the history of the GRAs, and scup stock status, **B)** describes commercial scup trawl discards (per the methodologies used in the 2023 management track stock assessment) **C)** conducts a temporal and spatial analysis based on raw data from the NMFS Trawl Surveys and Northeast Fisheries Observer Program, and **D)** summarizes key findings with potential next steps for continuing to minimize scup discards to the extent practicable per National Standard 9 requirements.

A) Scup Discard Estimation, GRA History, and Scup Stock Status

Discard Estimation

Scup trawl discards were estimated in the assessment with strata (i.e., groups) of calendar quarter, statistical area, and three mesh categories: large (5” or greater), small (smaller than 5” but larger than 2.125”), and squid (2.125” or less) for the years prior to 2020. There was relatively low small-mesh coverage prior to 2004 and therefore sub-annual estimates before then are uncertain.¹ Starting in 2020, commercial trawl discard rates are estimated in the assessment with gear, statistical area, and year strata in the Catch Accounting and Monitoring System (CAMS). Strata discard rates are calculated for the year and then those annual rates are applied to landings from individual trips from matching strata. CAMS uses less than 4” for small mesh trawl gear and 4” or greater for large mesh. It is not anticipated that overall trends in discard estimates are affected by the 2020 switch in discard estimation methods, but the methodology change complicates finer scale analyses. For example, in the figures below discard estimates by gear use different mesh bins before and after 2020.

History

As part of scup rebuilding and after much discussion between the Council and NMFS throughout the development of Amendment 12 to the Summer Flounder, Scup, and Black Sea Bass FMP, NMFS implemented Northern and Southern Gear Restricted Areas (GRA) through the 2000 Scup Specifications.² The Northern GRA went into effect November 2000 and the Southern GRA in January 2001. Since the GRAs were initially implemented they have been reviewed (most recently 2019) and modified (most recently 2016/2017) several times. Currently, the Southern GRA is in effect from January 1 - March 15 and the Northern GRA is in effect from November 1 - December 31. The most recent change in the boundary of the Southern scup GRA became effective January 1, 2017 (Figure 1). All figures in this document illustrate the current GRAs. Vessels fishing in the GRAs during the affected times of year may not fish for, possess, or land longfin squid, black sea bass, or silver hake (whiting) unless they use diamond mesh of at least **5 inches**.

In addition to the GRAs, there are incidental scup possession limits for trawl vessels using mesh smaller than 5 inches throughout the year. Some of the most recent change to these regulations included an increase to the incidental scup possession limit for trawl vessels using mesh smaller than 5 inches during November-April from 500 pounds to 1,000 pounds (effective January 1, 2016). This change was intended to reduce scup discards associated with the large increase in scup biomass. Additionally, effective January 1, 2019, the incidental scup possession limit from April 15-June 15 was further increased to 2,000 pounds to allow the spring small mesh inshore fisheries for longfin squid to retain, rather than discard, more of the scup they catch incidentally.

¹ Due to the high proportion of zero bycatch tows, earlier scup discard estimate coefficients of variation (C.V.s) may not reflect the underlying uncertainty (especially with lower coverage before 2004); the assessment has assigned higher C.V.s to more realistically reflect uncertainty (personal communication with Mark Terцерio). As with all estimates, actual discards were likely higher in some years and lower in some years.

² Fishers of the Northeastern United States; Summer Flounder, Scup, and Black Sea Bass Fisheries; 2000 Specifications, 5 Fed. Reg. 4547 (Jan. 28, 2000).

Stock Status

A 2023 management track assessment for scup was recently completed and successfully peer reviewed. This assessment retained the model structure of the 2015 benchmark stock assessment,³ and incorporated fishery catch and fishery-independent survey data through 2022.

The updated fishing mortality (F) reference point is $F_{MSY\ proxy} = F_{40\%} = 0.190$. The updated spawning stock biomass (SSB) target reference point is $SSB_{MSY\ proxy} = SSB_{40\%} = 173.27$ million pounds (78,593 mt) and the overfished threshold (which is half of the target) = 86.64 million pounds (39,297 mt).

According to the 2023 assessment, the scup stock from Cape Hatteras, North Carolina extending north to the US-Canada border was not overfished and overfishing was not occurring in 2022.⁴ Retrospective adjustments were statistically justified and increased the SSB estimate and decreased the F estimate. The retrospective trends were directionally similar in the previous (2021) management track assessment but had not been strong enough to warrant adjustments. From the 2023 management track assessment, adjusted SSB was estimated to be about 425 million pounds (193,087 mt, Figure 2 left vertical axis) in 2022, almost 2.5 times the $SSB_{MSY\ proxy}$ reference point of 173.27 million pounds (78,593 mt, Figure 2). SSB shows a declining trend since 2018 and recruitment has been below the long-term average since 2017.

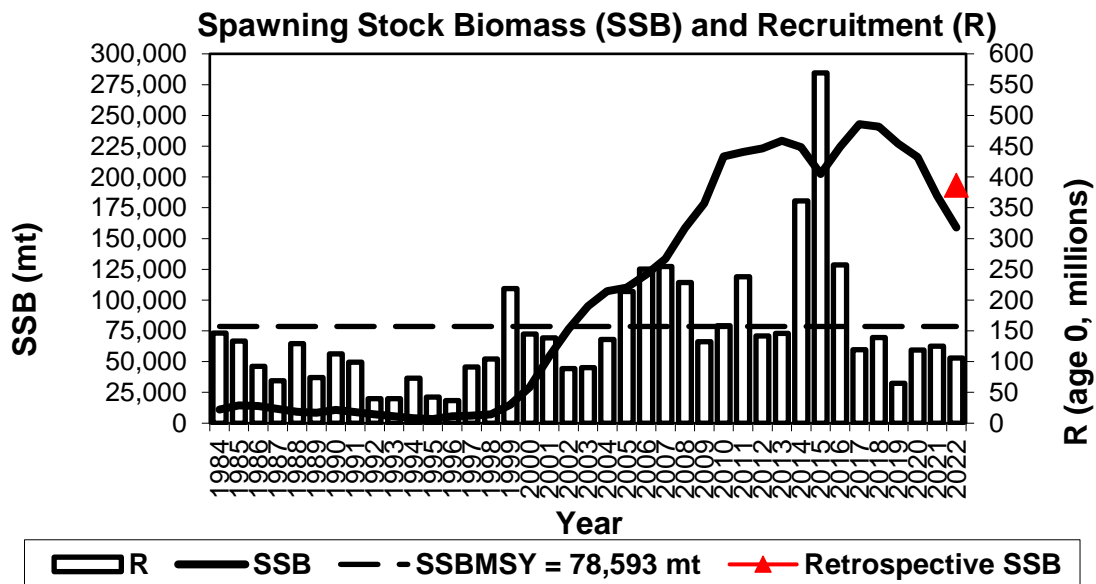


Figure 2: Scup spawning stock biomass and recruitment, 1984-2019. The horizontal dashed line represents the biomass target from the 2023 management track stock assessment. Adjusted SSB in 2022 for comparison against the $SSB_{MSY\ proxy}$ reference point is 193,087 mt.

³ 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: <https://repository.library.noaa.gov/view/noaa/4975>

⁴ Available at: <https://apps-nefsc.fisheries.noaa.gov/saw/sasi.php>

B) Discard Evaluation using Aggregated Management Track Assessment Discard Data

Commercial scup discards have decreased since 2017 but are relatively high compared to other years since GRA implementation in 2000/2001 (Figure 3).

Total estimated scup discards were 2,171 mt (4.8 million pounds) in 2022 and are mostly from trawl fisheries. Discard estimates from 2017 remain the record high in the time series at about 4,733 mt (10.4 million pounds). Average discards since 2001 when both GRAs were first in effect are about 1,917 mt (4.2 million pounds), just below 2022 estimated discards.

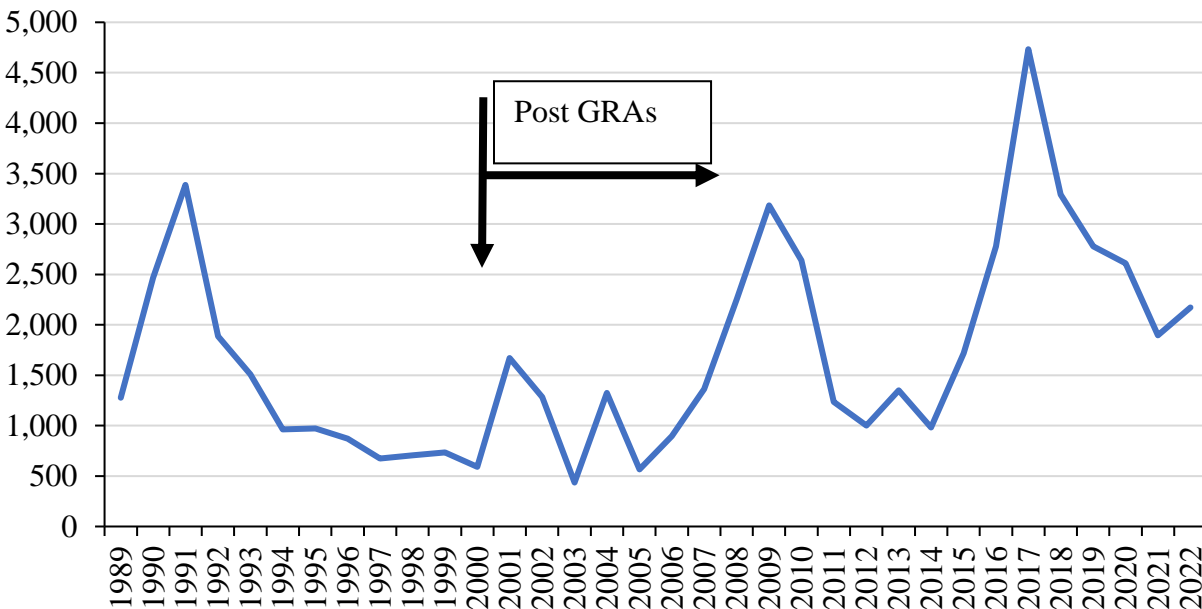


Figure 3: Estimated discards from all gear types from the 2023 management track assessment since 1989. Starting in 2020, commercial discards are estimated using CAMS.

Raw 2022 observer data indicate that about 59% of discarded scup were due to size regulation, 29% were due to no market (too small), 4% were due to vessels retaining only certain size for best price due to possession limit regulations, 3% due to no market, and 5% due to other reasons. Discard reasons were generally consistent in recent years (2020-2022).

Discards are variable by mesh size, month, quarter, and statistical area.

In 2022, CAMS-small mesh (less than 4”) accounted for 55% of total estimated scup discards, CAMS-large mesh (4” or greater) accounted for 36%, and unknown mesh size accounted for 9% (Figure 4). These proportions of total scup discards by mesh size were relatively similar to 2021; however, in 2020 the proportion of total scup discards in small mesh was higher at about 71%. Given the change in mesh size categories, scup discards by mesh size from 2020-2022 cannot be directly compared to years prior to 2020; however, earlier scup discards by the different mesh size were also variable from year to year. In the more recent years, the smaller mesh sizes did account for a high proportion of total discards. On average, from 1989-2019, about 81% of total scup discards came from mesh sizes smaller than 5 inches (small and squid mesh categories combined).

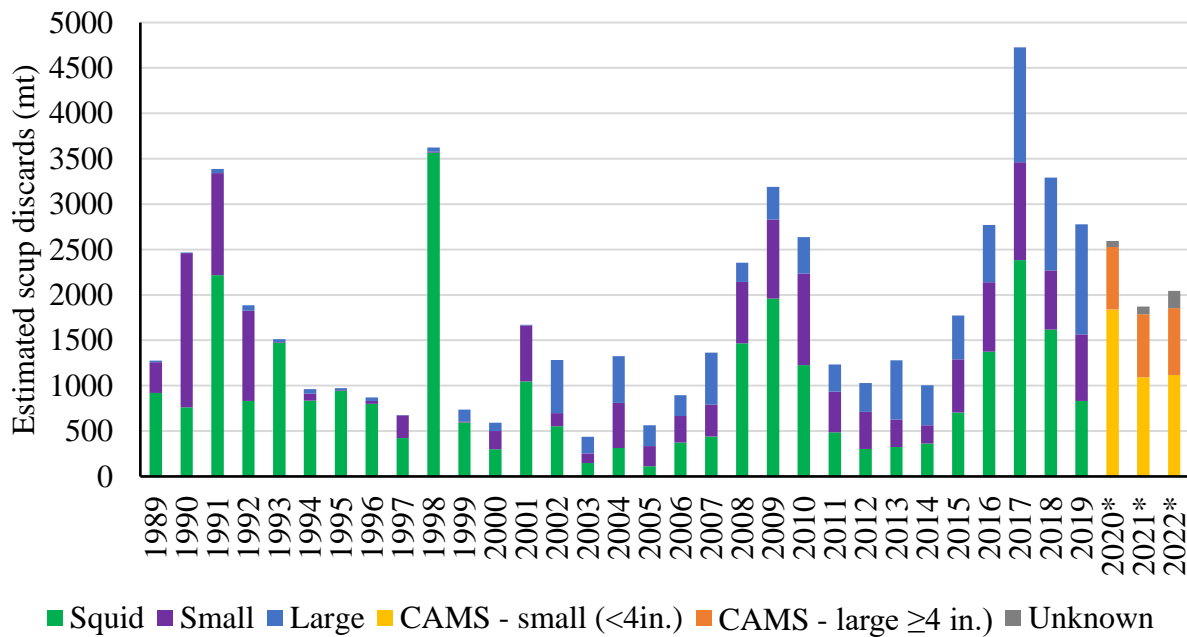


Figure 4: Estimated scup discards in trawls by year and mesh size from 1989-2022. *Note: starting in 2020 discard estimates by mesh size category changed due to the switch to CAMS. From 1989-2019 mesh categories include: large (5” or greater), small (smaller than 5” but larger than 2.125”), and squid (2.125” or less). From 2020-2022 mesh categories changed to CAM-large (4” or greater), CAMS-small (less than 4”), and Unknown.

The 2021/2022 seasonal patterns of estimated discards show that Quarters 2 and 3 (April-September) accounted for the majority of recent small mesh scup discards while less of a seasonal pattern is evident for large mesh gear (Figure 5).

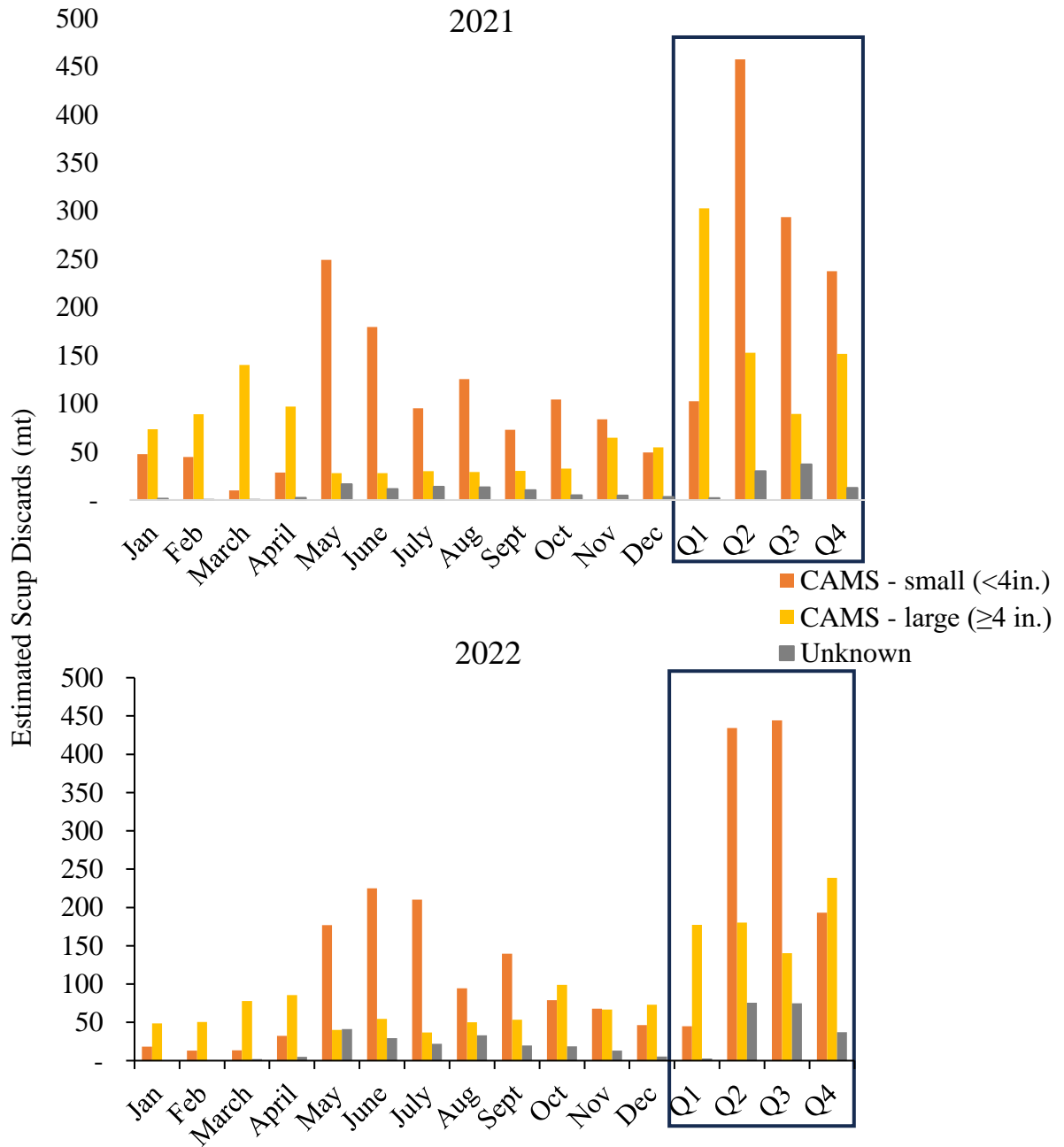


Figure 5: 2021 and 2022 estimated scup discards from trawls by month and mesh size. Estimated discards by quarter and mesh size are also shown within the black box within each graph.

Figure 6 describes combined total discards across all mesh sizes by quarter and year and illustrates the substantial seasonal variability among years. Quarters 2 and 3 have accounted for most discards each year since 2016.

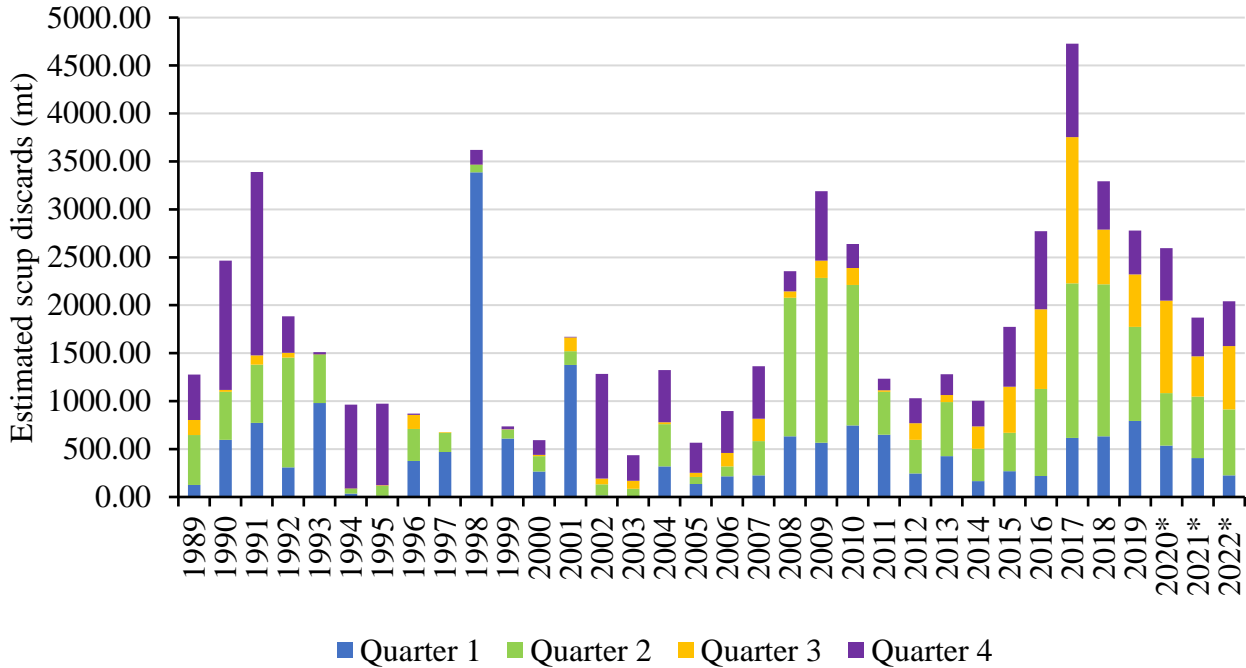


Figure 6: Estimated scup discards from trawls for all mesh categories by calendar quarter and year from 2001-2022. *Note: starting in 2020 discard estimates by mesh size category changed due to the switch to CAMS.

The proportion of commercial scup trawl discards in statistical areas which are partially included in at least one GRA has remained relatively high throughout the time series. Relatively more discards have also been observed in statistical areas 538 and 611 (which do not overlap with the GRAs) since the GRAs were implemented as shown by the grey and green bars in Figure 7.

Scup discards in statistical areas which are partially included in the Southern GRA have been much lower in recent years and are generally lower than in years prior to implementation of the GRAs (Figure 7). As shown in Figure 7, CAMS-small mesh trawl discards from 2020 through 2022 in these areas account for 10%-2% of total discards depending on the year.

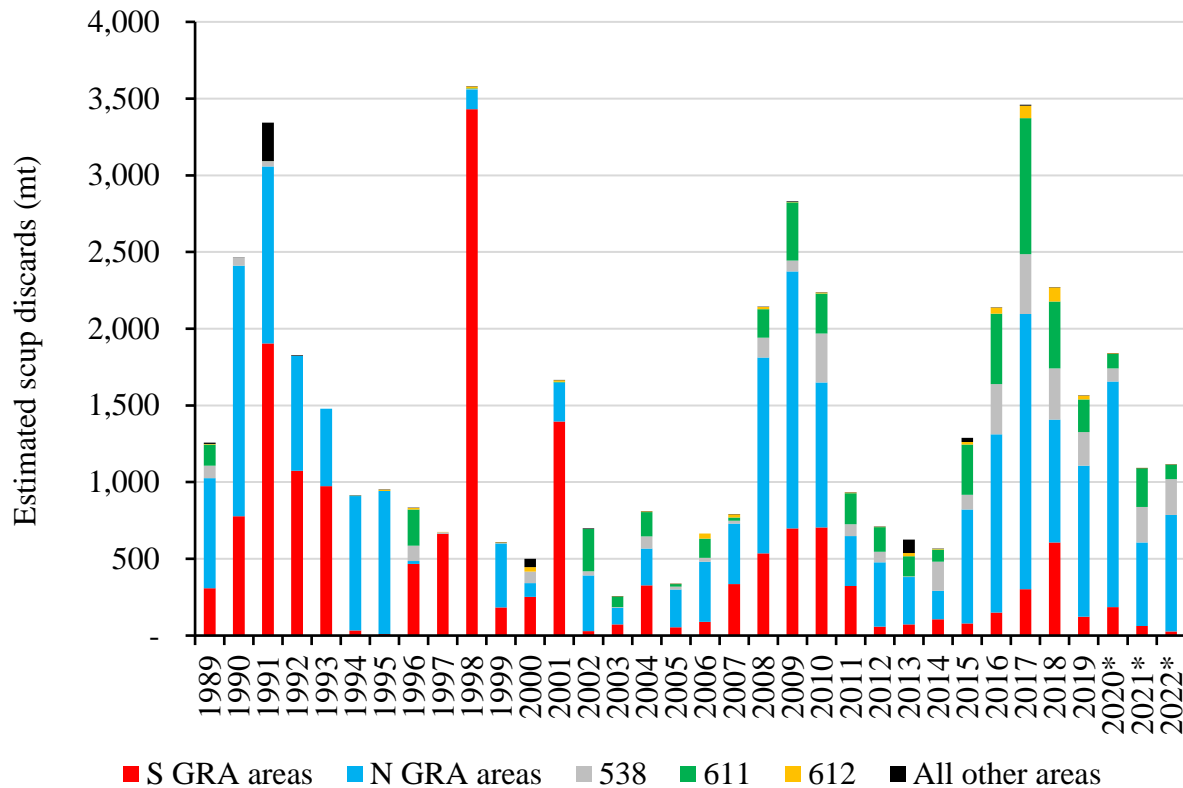


Figure 7: Estimated scup discards from trawls by year and statistical area for squid and small (less than 5”) mesh sizes from 1989-2019 and CAMS-small mesh (less than 4”) in 2020-2022. *Note:* all other areas are statistical areas which are not part of the GRAs and which had less than 100 mt of estimated scup discards during 2001-2022 are grouped together (i.e. areas 513, 514, 515, 521, 522, 525, 526, 533, 561, 562, 614, 624, 627, and 636). * Note: starting in 2020 discard estimates by mesh size category changed due to the switch to CAMS.

Scup discard levels have closely tracked juvenile fish numbers since 1996. The numbers of age 1-3 fish in the stock and total numbers of fish discarded from 1996-2022 are highly correlated (coefficient = 0.81 and discarded age 1-3 fish averaged at about 84% of total discards per year; Figure 8). While the percentage of all age 1-3 fish discarded yearly has been low since the GRAs, the percentage had already dropped into the current range by 1999, before the GRAs were implemented (Figure 9). The percentage of discarded weight relative to biomass has been low since the GRAs, but had also already dropped substantially by 1999 (Figure 10). Discards also appear well correlated to recent recruitment (Figure 11).

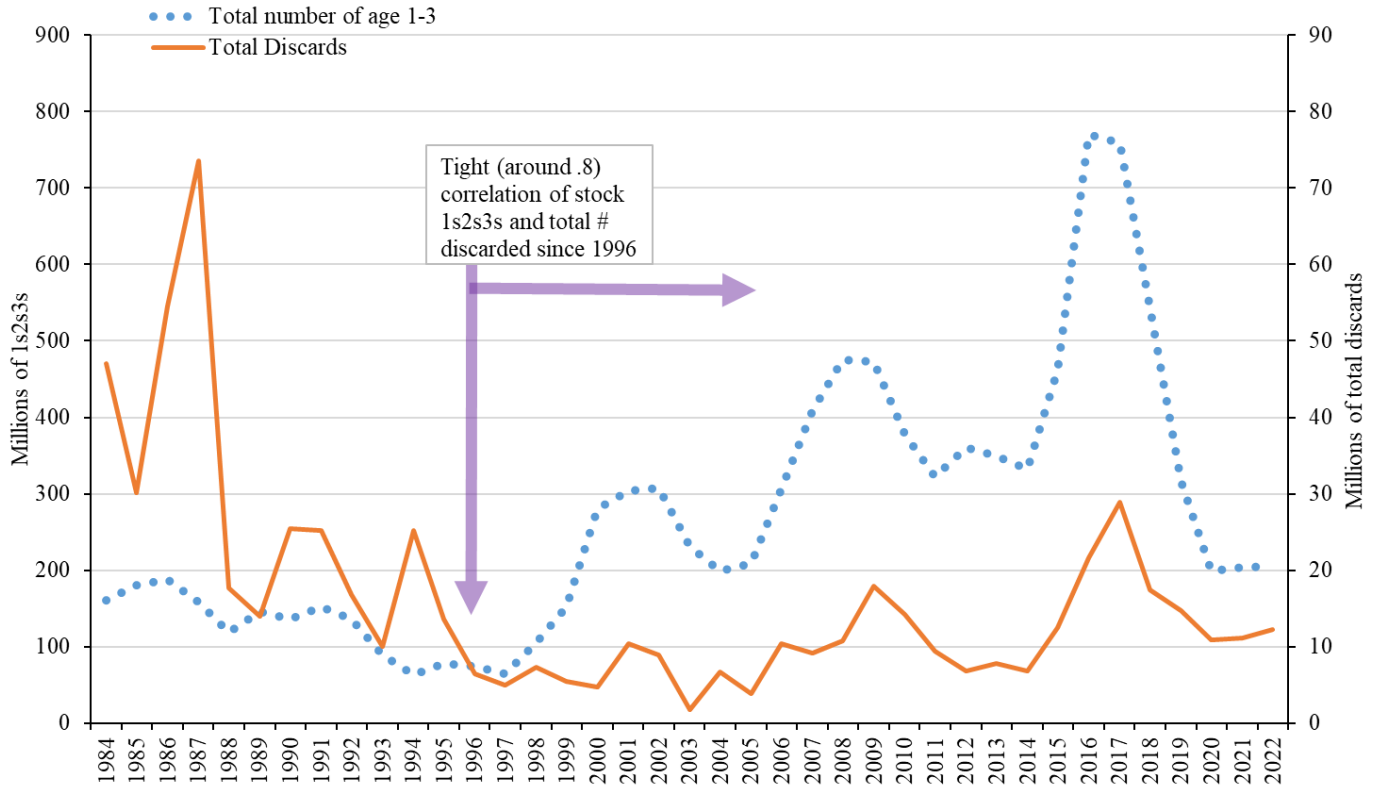


Figure 8: Total number of age 1-3 fish in the stock compared to total commercial discards from the 2023 management track assessment. *Starting in 2020 discard estimates calculated by CAMS.

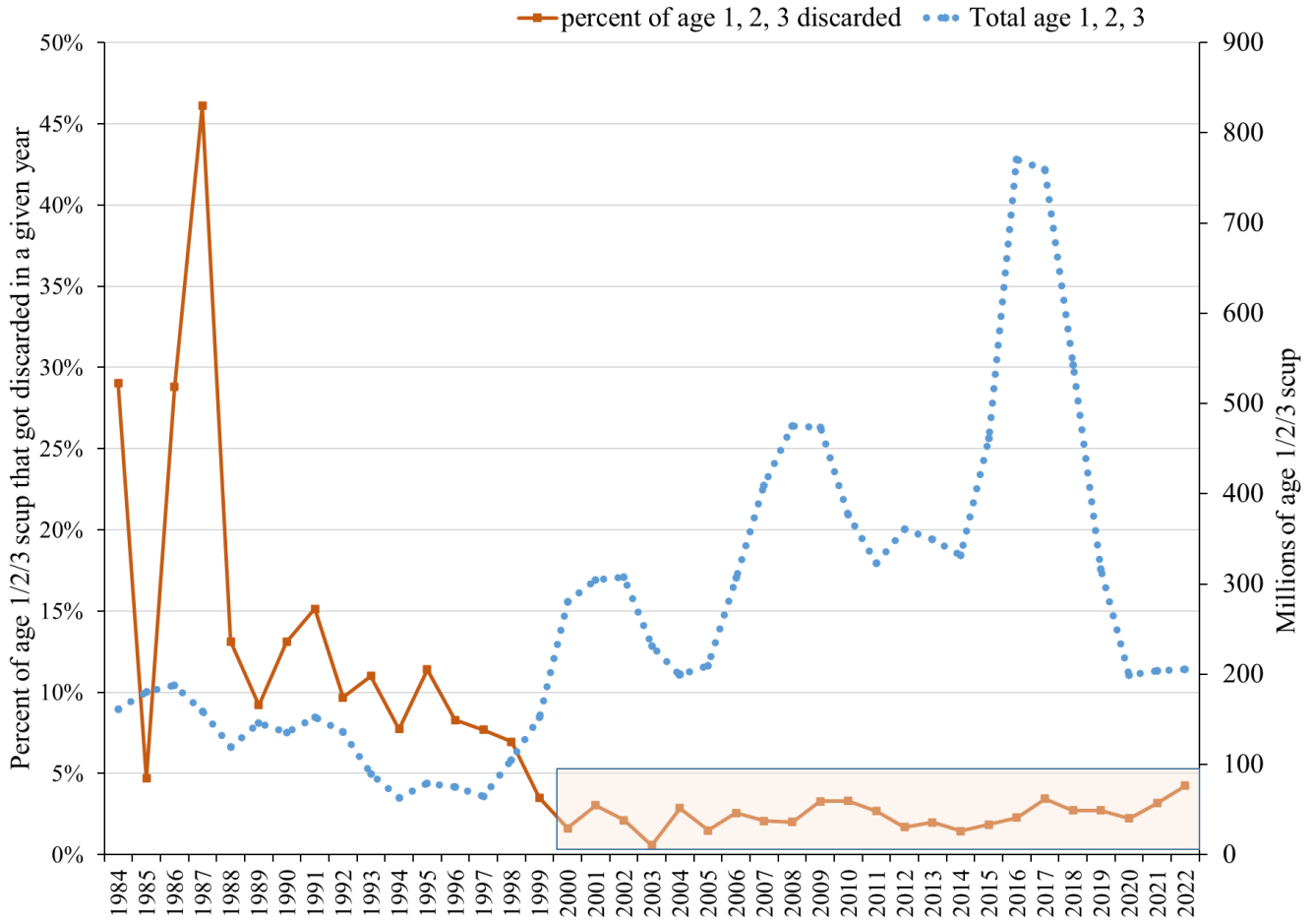


Figure 9: Percentage of age 1-3 fish discarded compared to the total number of age 1-3 fish in the stock from the 2023 management track assessment. *Starting in 2020 discard estimates calculated through CAMS.

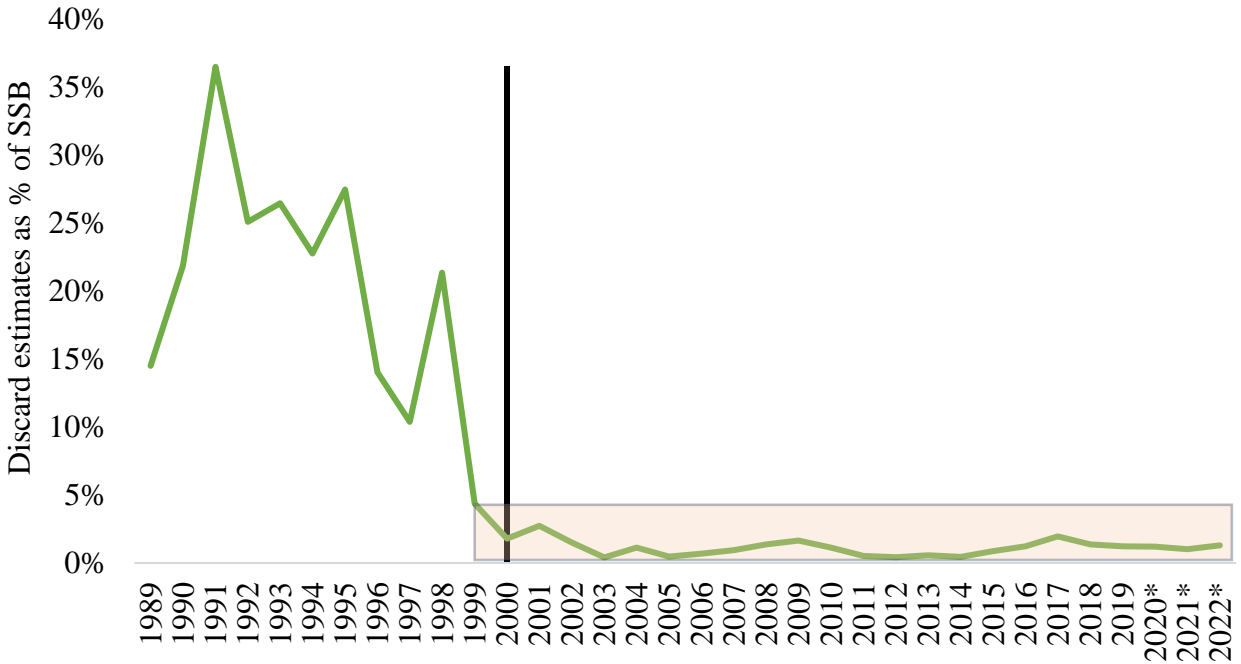


Figure 10: Annual discard estimates as a proportion of spawning stock biomass from 1989-2022 from the 2023 management track assessment (NEFSC 2019). The black solid line represents the implementation of the GRAs in November 2000. *Starting in 2020 discard estimates calculated through CAMS.

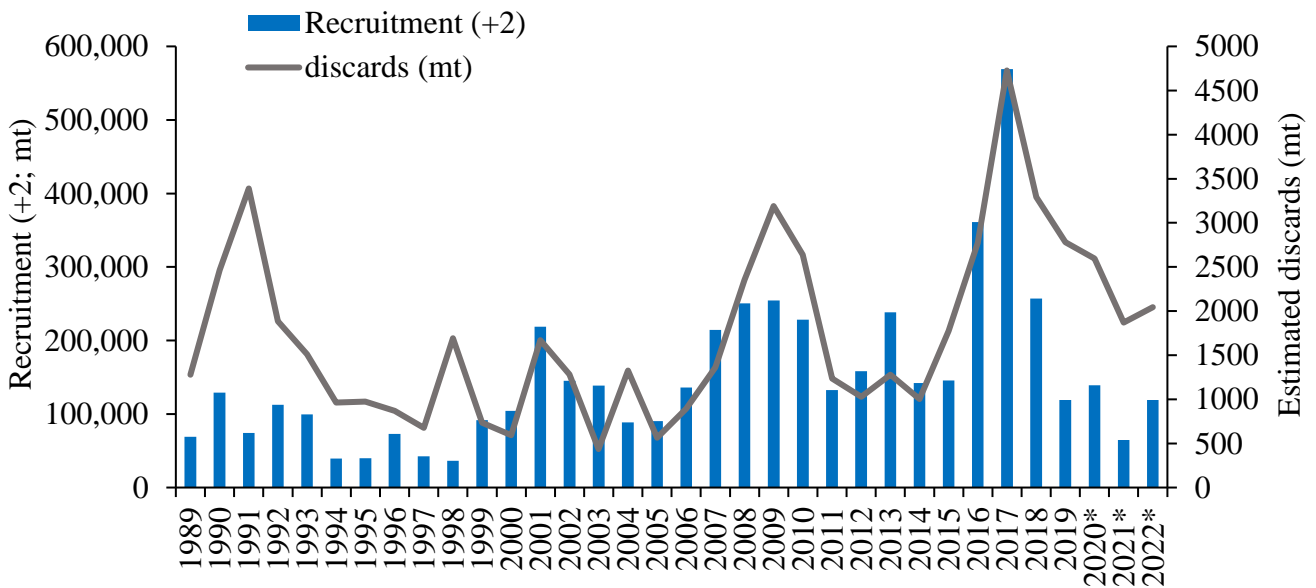


Figure 11: Estimated annual scup discards and recruitment from two years prior (e.g. 2015 recruitment is shown in 2017). Discards are shown for all mesh sizes combined in all statistical areas from 1989-2022. * Note: starting in 2020 discard estimates by mesh size category changed due to the switch to CAMS.

C. Initial Spatial and Temporal Analysis with Raw Trawl Survey and Observer Data⁵

Southern GRA

The majority of scup caught during the winter and spring NEFSC bottom trawl surveys (January – March) 1980-1999 occurred in, around, and to the south of the current Southern GRA boundary (Figure 12). Substantial winter longfin squid landings also occurred around the Southern GRA 1997-1999 (Figure 13), and despite limited observer coverage, small mesh (<5”) scup discarding was also observed in the Southern GRA area (especially in the northern portion) during the GRA closure time period preceding implementation (1990-1999; Figure 14).

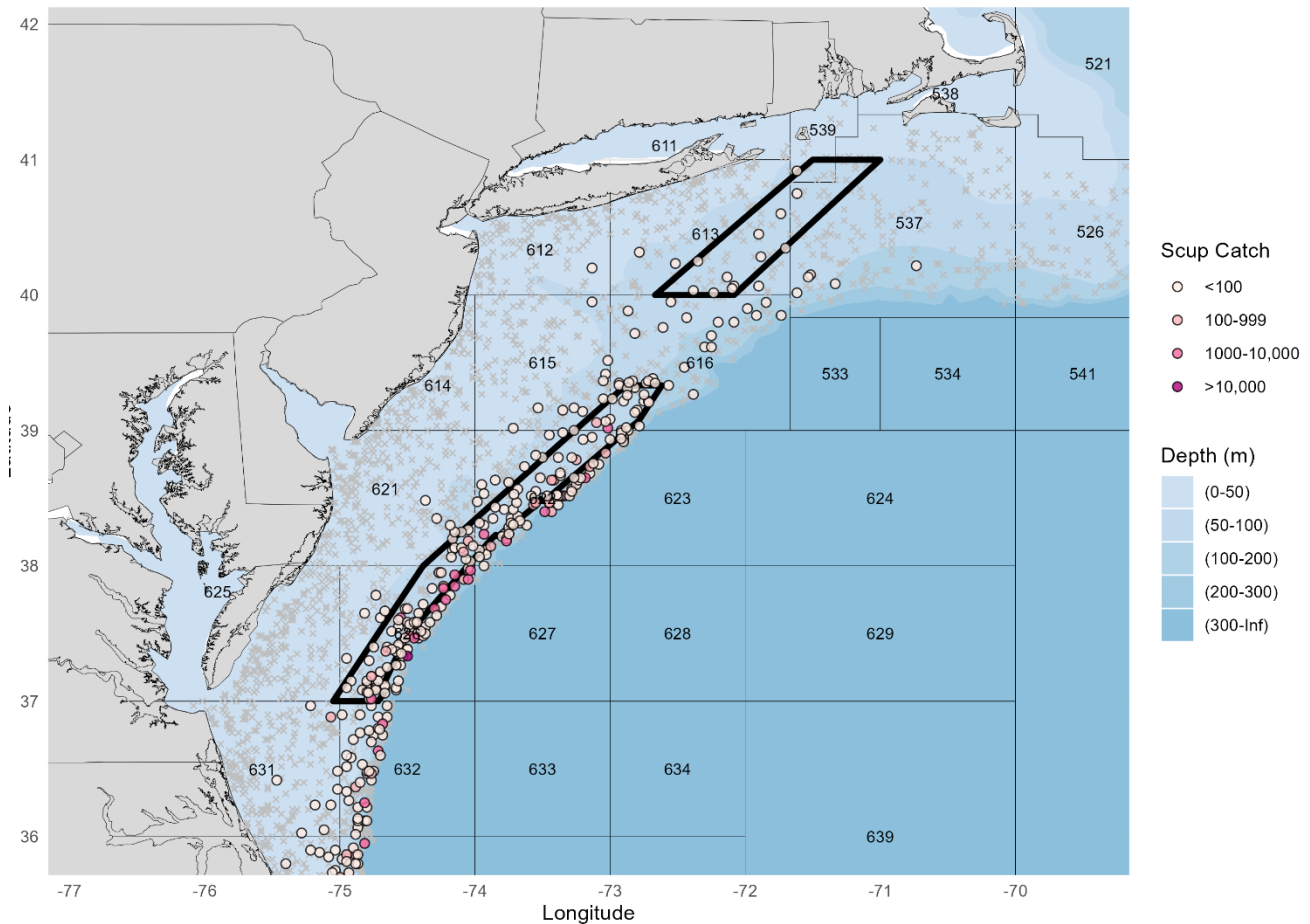
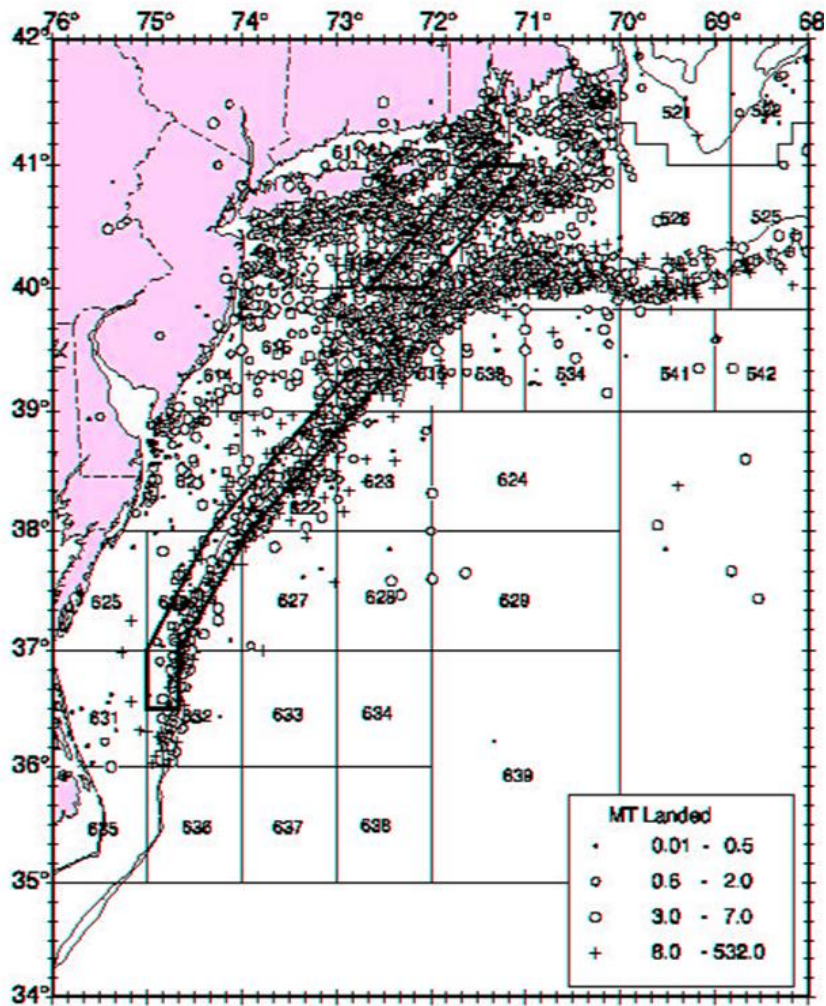


Figure 12: Total NEFSC survey scup catches during the months of January through March (similar timing as when the Southern GRA closure occurs) from 1980 through 1999. Note the Southern GRA closure was not effective until 2001. Colored circles represent quantity of scup catch in survey areas and grey x's represent areas surveyed but where no scup were caught. Black boxes shown are the Northern and Southern GRA boundaries.

⁵ Different scales are used on observer data figures because the observed amounts are dependent on numbers of observed trips, which vary substantially across years.



Loligo Landed (MT): VTR 1997-1999: Dec., Jan., Feb.

Figure 13: Total commercial longfin squid landings (mt) from 1997 through 1999 in December through February. Black boxes shown are the Northern and Southern GRA boundaries. (MAFMC 2001, Scup Specifications EA)

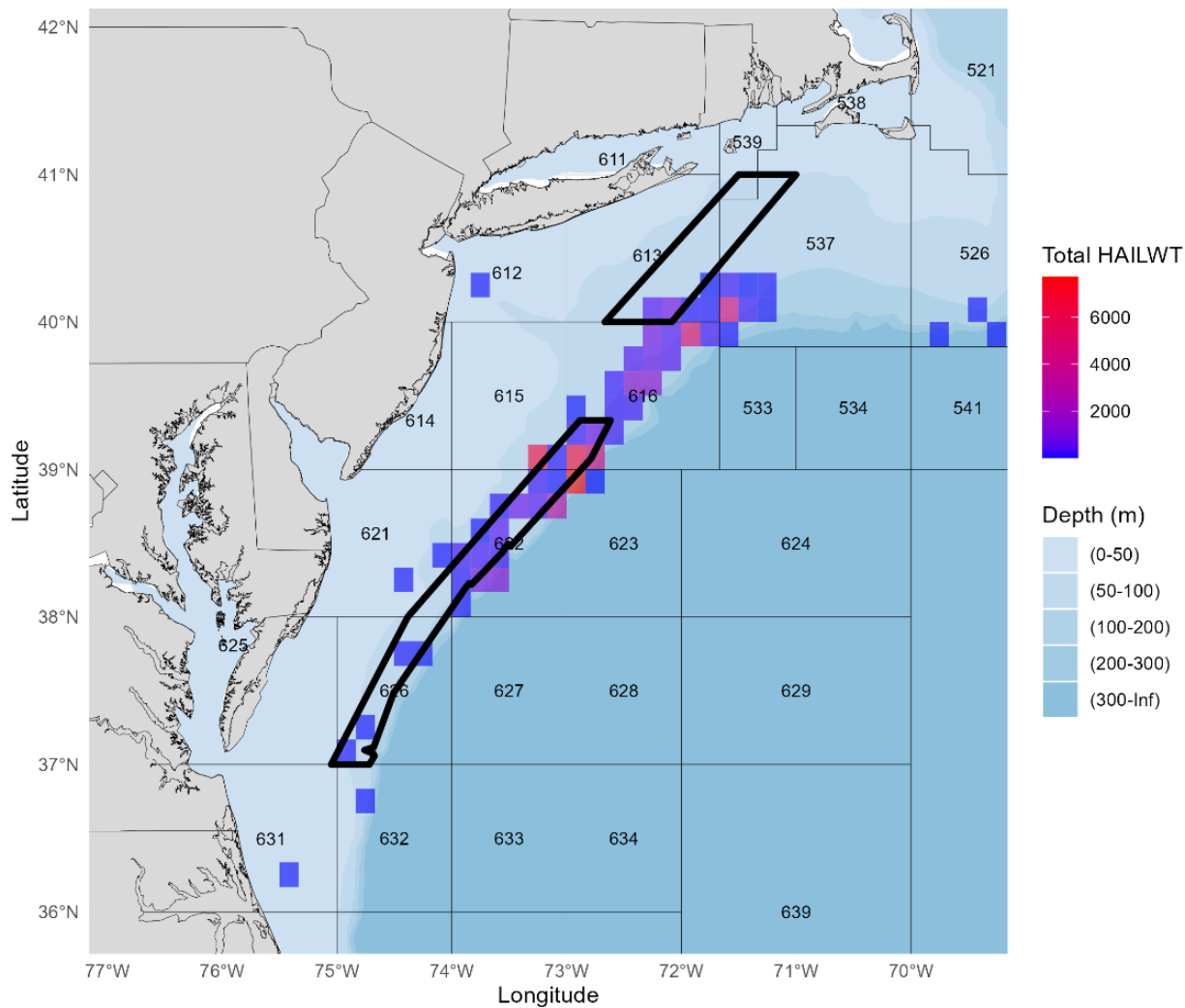


Figure 14: Commercial small mesh (less than 5") scup discards (mt) during January through March 15 from 1990 through 1999. Shaded TMS colors represent the quantity of observed commercial scup discard by ten-minute squares (TMS) and the black boxes shown are the current Northern and Southern GRA boundaries. Data Source: Unpublished NMFS Observer Program data.

In recent years, there have been substantial amounts of scup discarded during the first longfin squid trimester of the year (January – April) despite the Southern GRA closure. The majority of these discards occur largely outside of the Southern GRA boundary (Figure 15). Scup catch from recent spring NEFSC survey data indicates a large amount of scup is still caught within the Southern GRA boundary (Figure 16).

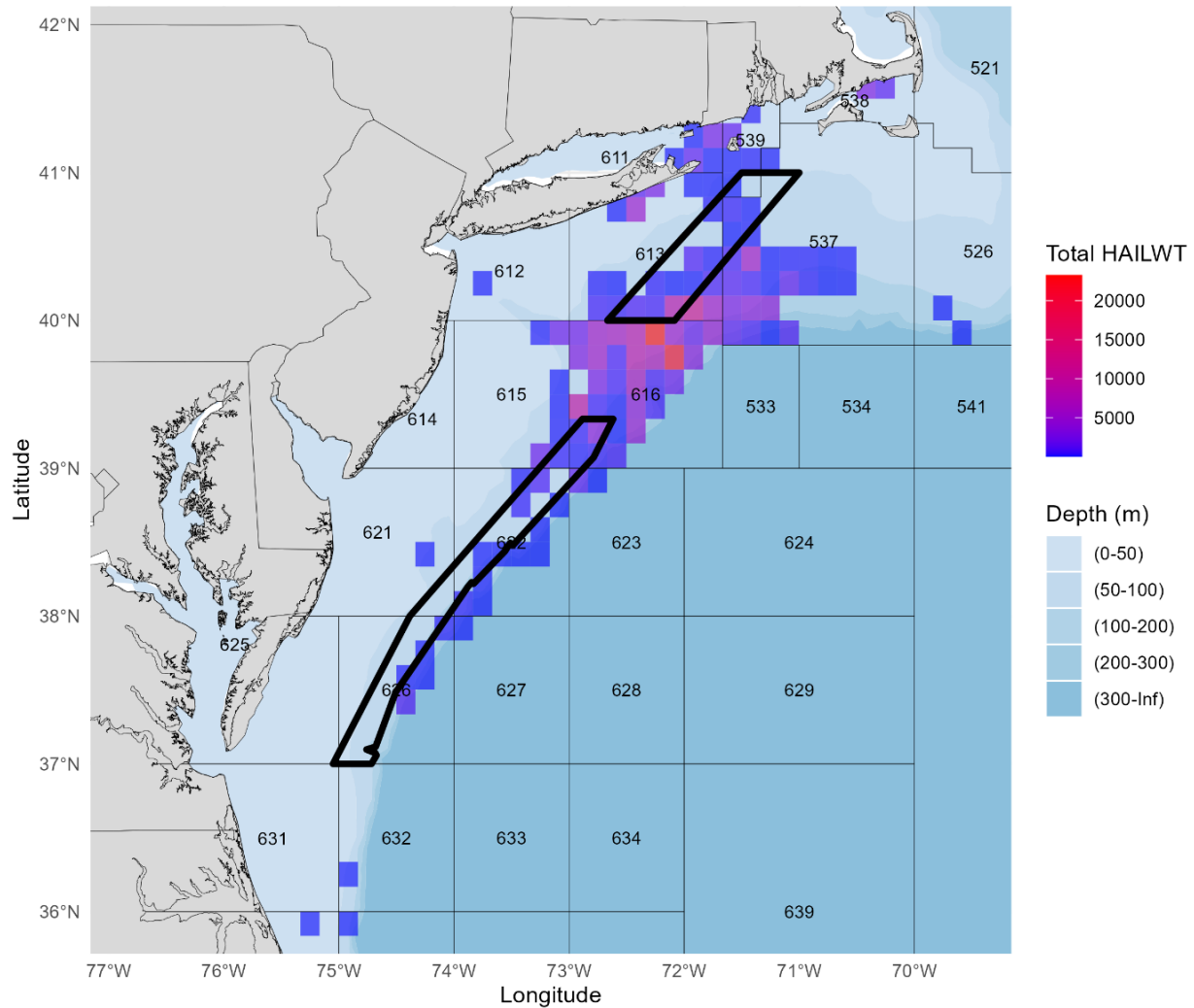


Figure 15: Recent commercial small mesh (less than 5”) scup discards (mt) during the first trimester of each year (January through April) from 2017-2022. Shaded TMS colors represent the quantity of observed commercial scup discards by TMS and the black boxes shown are the Northern and Southern GRA boundaries. Data Source: Unpublished NMFS Observer Program data.

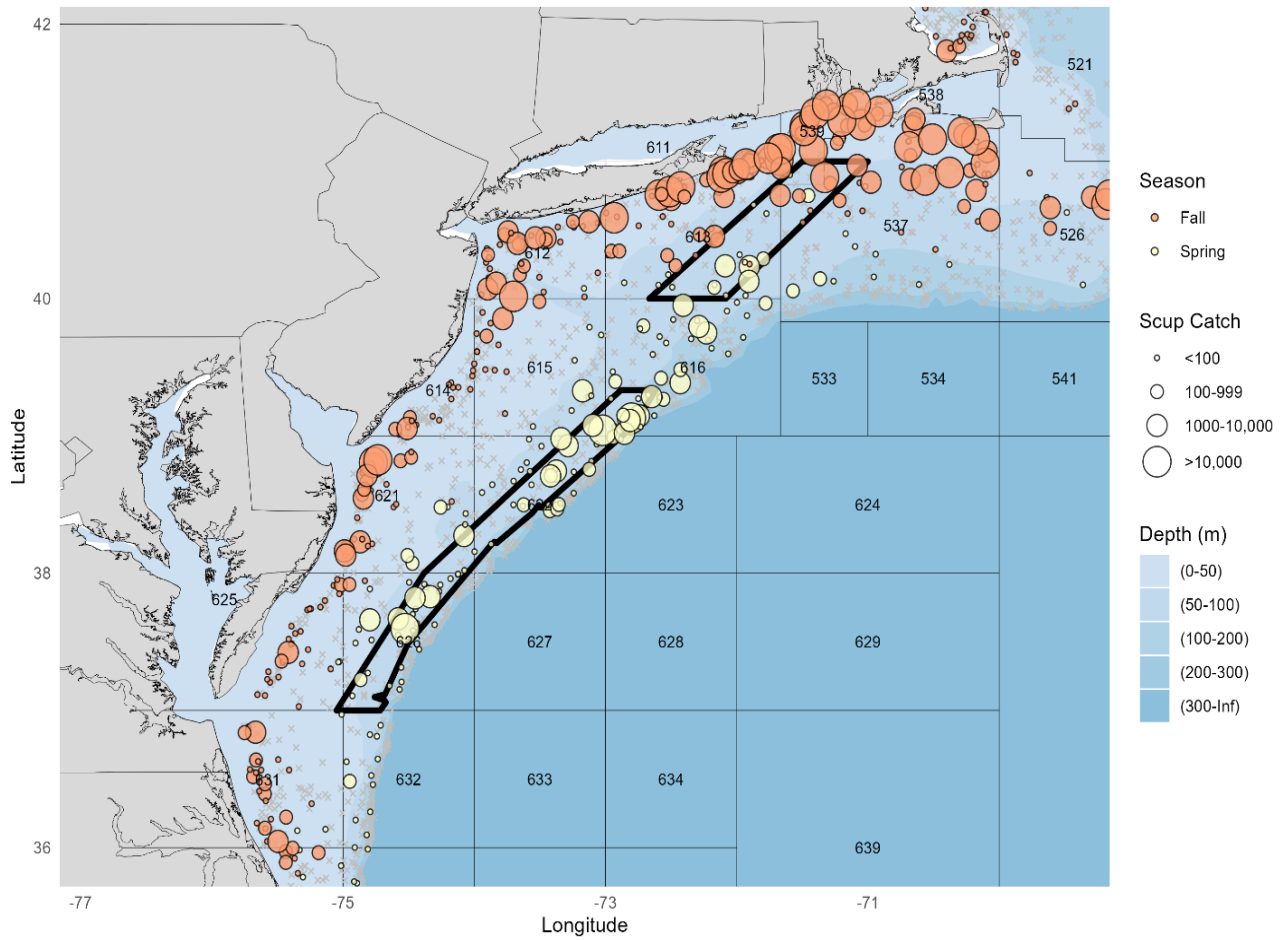


Figure 16: Total NEFSC survey scup catch numbers during the NEFSC trawl surveys 2017-2022. Colors represent the different surveys and the size of the circle represents the quantity of scup caught. Black boxes shown are the Northern and Southern GRA boundaries.

Northern GRA

The Northern GRA is generally aligned with the small mesh discard observations that occurred before GRA implementation (Figure 17) as well as with commercial longfin squid effort (Figure 13). Unlike the Southern GRA, the NEFSC trawl survey data do not overlap temporally or spatially with the Northern GRA given the timing of when the survey is conducted.

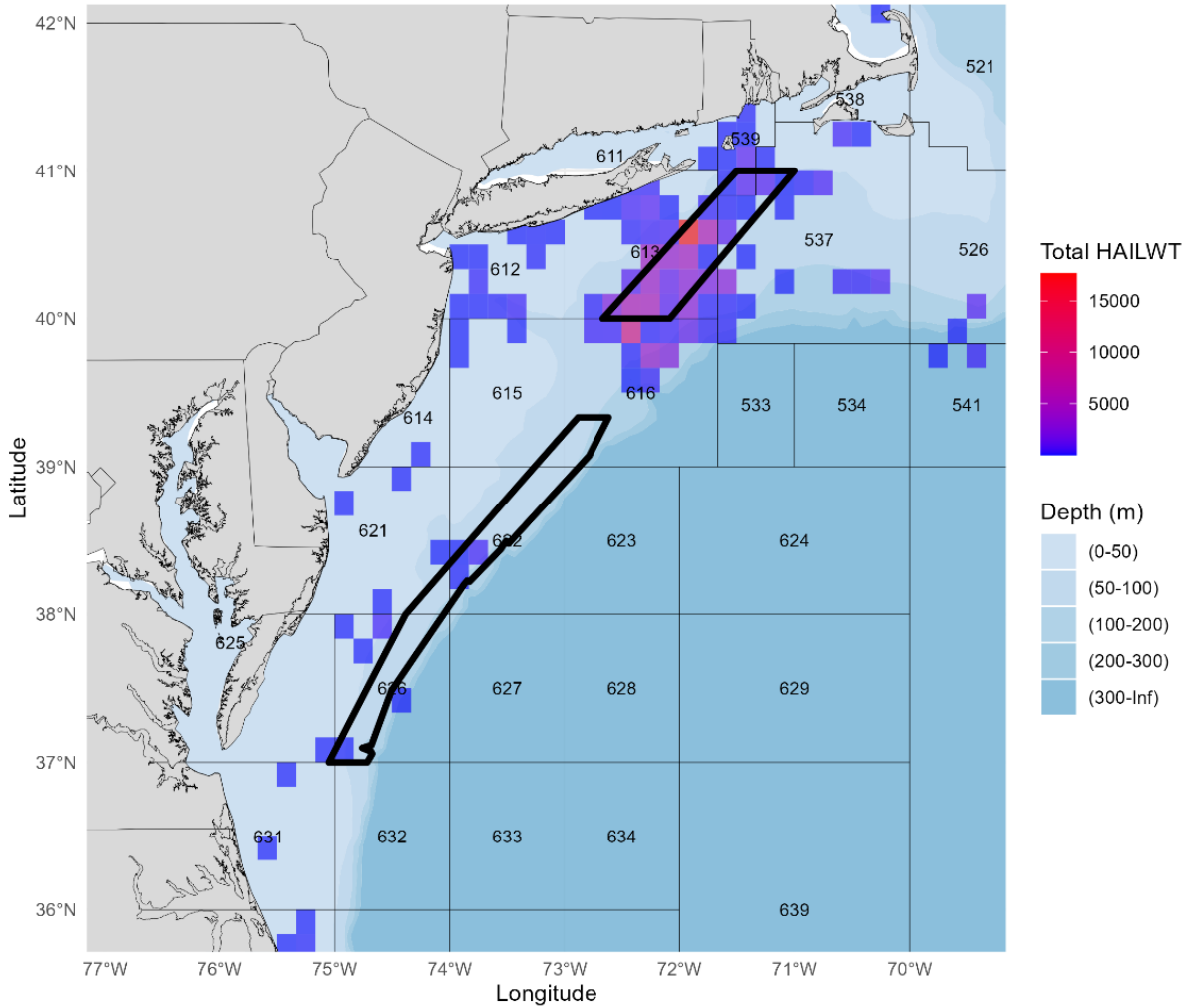


Figure 17: Commercial small mesh (less than 5") scup discards (mt) during November through December (similar timing as when the Northern GRA closure occurs) from 1990 through 1999. Shaded TMS colors represent the quantity of observed commercial scup discards by TMS and the black boxes shown are the Northern and Southern GRA boundaries. Data Source: Unpublished NMFS Observer Program data.

In recent years, there have been substantial northern scup discards during the second longfin squid trimester (May – August) when no GRAs are active (Figure 18 left panel) as well as in the third squid trimester (September – December) despite the Northern GRA closure (Figure 18 right panel).

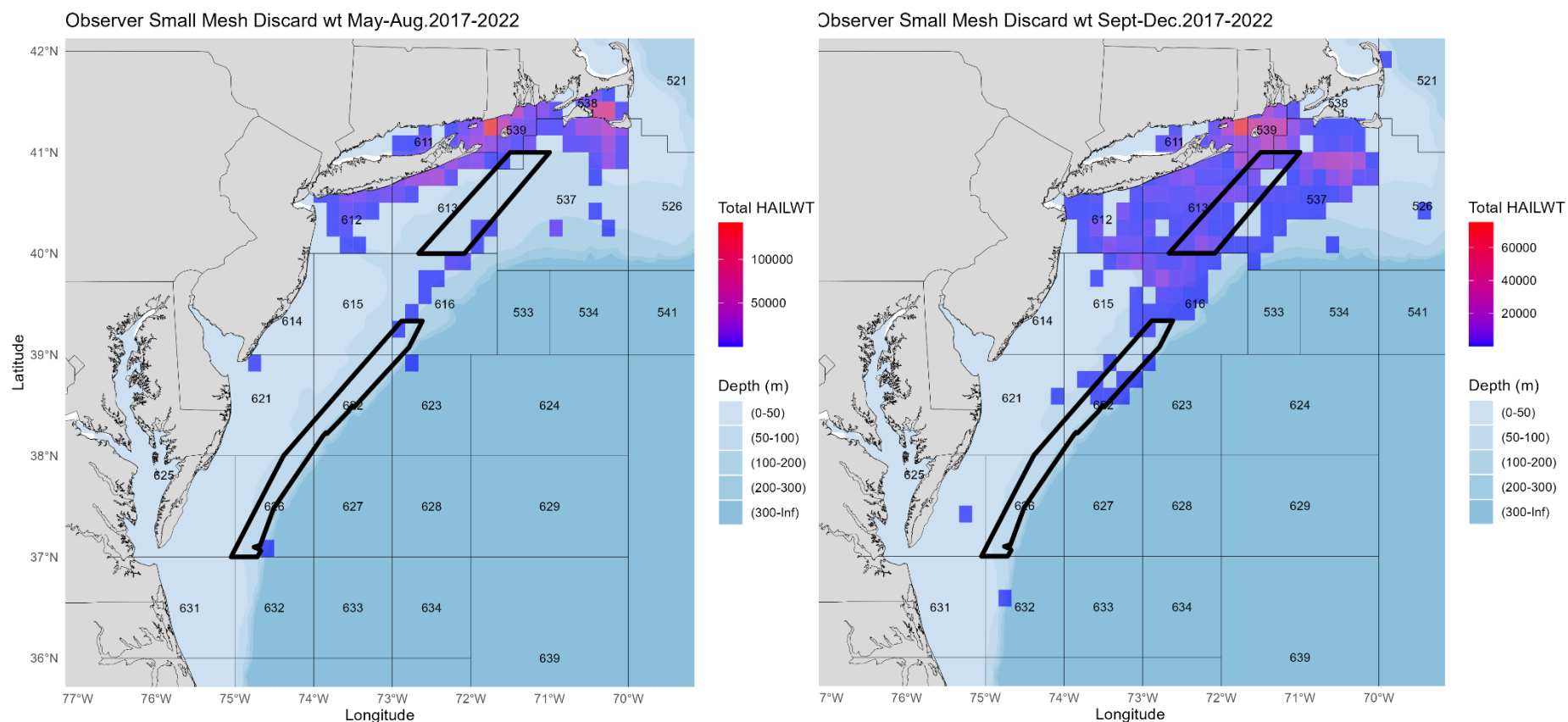


Figure 18: Recent commercial small mesh (less than 5") scup discards (mt) during the second and third trimester of each year (May – August and September – December) from 2017-2022. Shaded TMS colors represent the quantity of observed commercial scup discard by TMS and the black boxes shown are the Northern and Southern GRA boundaries. Data Source: Unpublished NMFS Observer Program data.

D) Key Findings and Recommendations

The analysis indicates that commercial scup discards have decreased since the recent peak in 2017 and represent a very small percentage of annual scup biomass since implementation of the GRAs (Figure 10). However, absolute discard amounts remain relatively high compared to other periods following the implementation of the GRAs, and represent 10%-40% of total annual catch from 2013-2022. The majority of commercial discards are from smaller mesh gear, but spatial and temporal patterns vary year to year.

There is a strong correlation between scup discards and juvenile fish stock numbers, emphasizing the importance of reducing discards to sustain the stock's health. The analysis suggests that the GRAs have had a positive impact in reducing discards of juvenile scup in the GRAs, but there are now substantial discards around the GRAs in both time and space.

It appears the GRAs have contributed to the rebuilding of the scup stock since the early 2000s; however, given the spatial patterns of recent scup discards, it seems that alternative measures (e.g., modified closures and/or areas) or modification of the GRAs might do a better job at minimizing scup discards. However, continued use of the GRAs should consider changes that should have a high probability of further reducing where discards *will be* rather than reacting to where discards *have been*. Variability in both scup distributions and fleet effort should both be accounted for in any alternative development. Impact analyses should also consider how fishing effort might react to any potential GRA changes.

Staff recommend the Council's Scientific and Statistical Committee review this report and provide feedback and recommendations on research to examine the predictability of scup bycatch using environmental data or other ways to reduce scup bycatch.

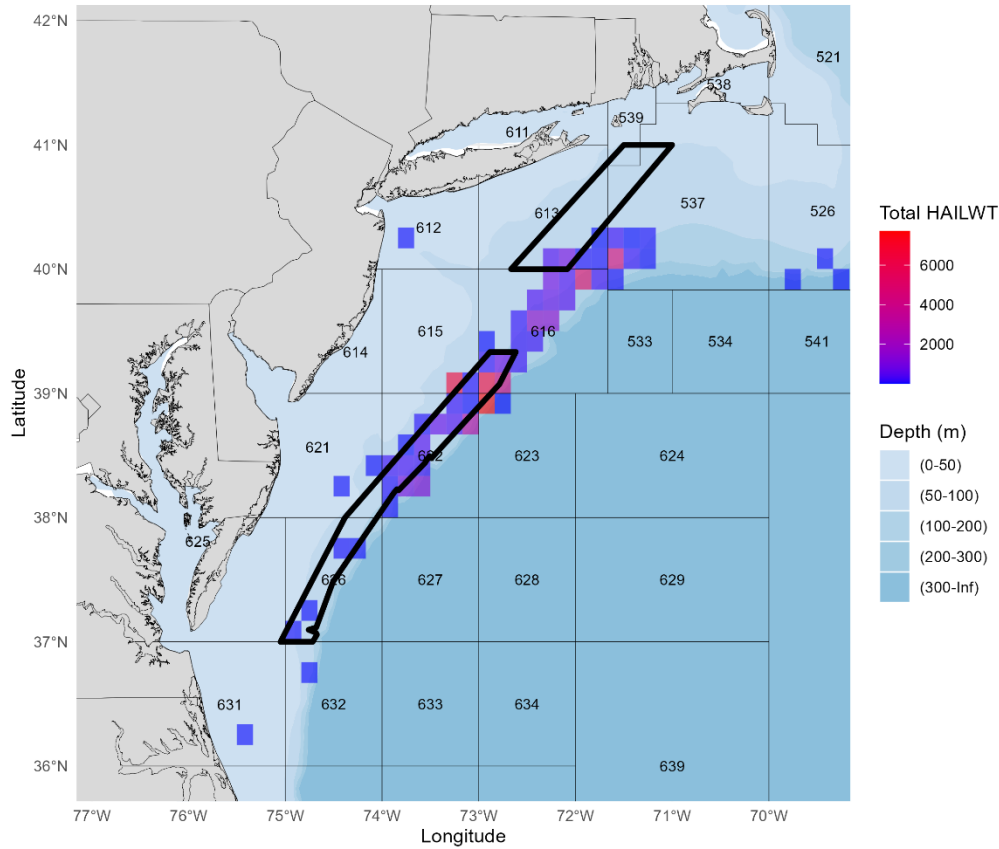
For the 2024 Implementation Plan, staff recommend identifying, as a high priority, research to examine if scup bycatch/discards can be predicted using environmental data. Recent research has demonstrated promise for such work in river herring and shad bycatch. (Roberts et. al., 2023).⁶ Such information could help ensure that any GRA modifications do not simply re-direct effort and create alternative scup bycatch hotspots.

For the 2024 Implementation Plan, staff also recommend the Council include a Framework Action to consider GRA modifications or other measures to further reduce scup discards (working in tandem with the identified high priority research).

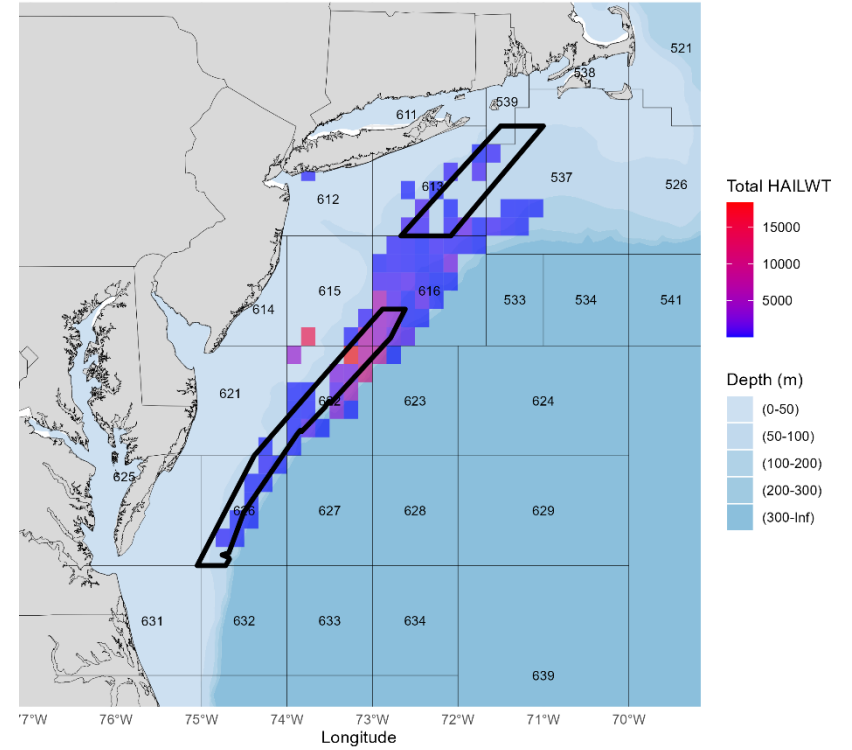
⁶ Roberts, K.E., Stepanuk, J.E.F., Kim, H., Thorn, L.H., Chong-Montenegro, C., Nye, J.A. (2023). Developing a subseasonal ecological forecast to reduce fisheries bycatch in the Northeast U.S. Progress in Oceanography: 213:103021.

APPENDIX 1

Observer Small Mesh Discard wt Southern Closure (Jan 1-Mar 15).1990-1999



Observer Small Mesh Discard wt Southern Closure (Jan 1-Mar 15).2000-2009



Observer Small Mesh Discard wt Southern Closure (Jan 1-Mar 15).2010-2022

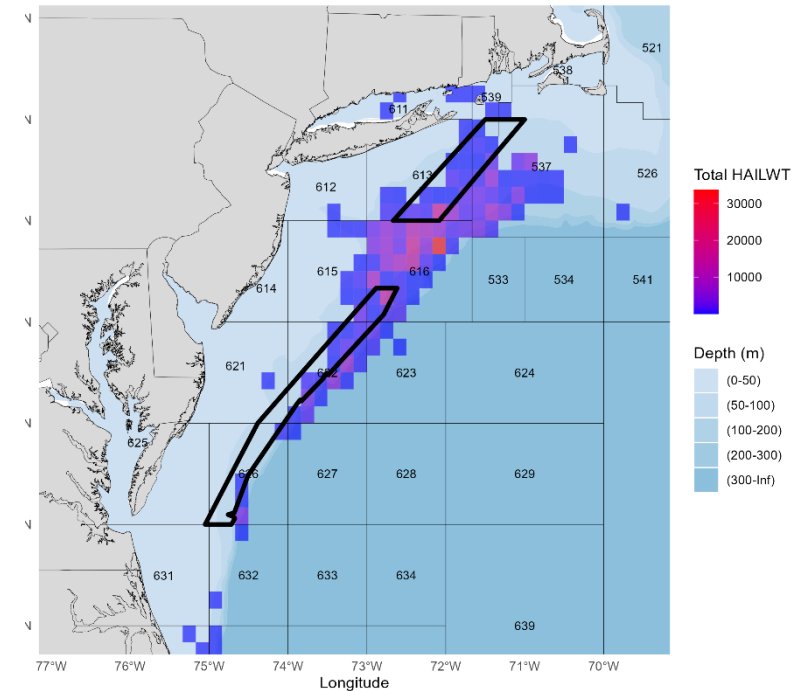


Figure 19: Commercial small mesh (less than 5") scup discards (mt) during the Southern GRAs closure: prior to the implementation of the GRAs (left); shortly after implementation (top right); and in more recent years (bottom right). Data Source: Unpublished NMFS Observer Program data.

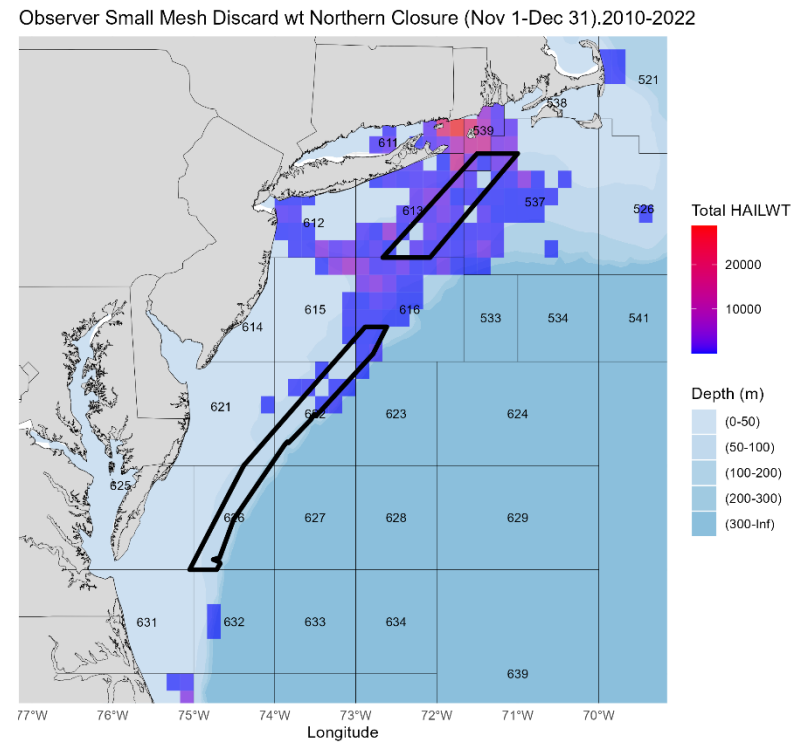
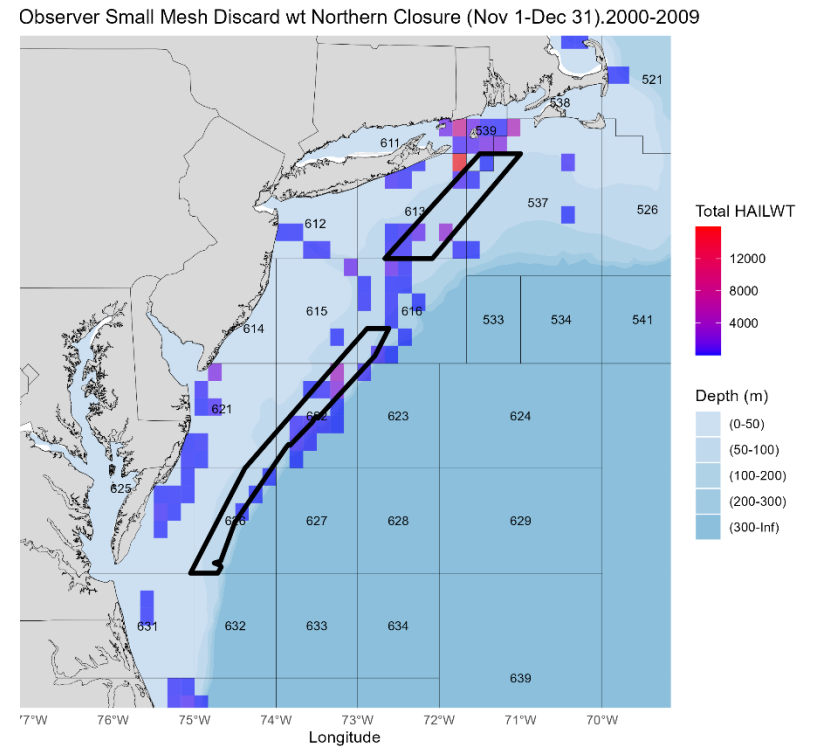
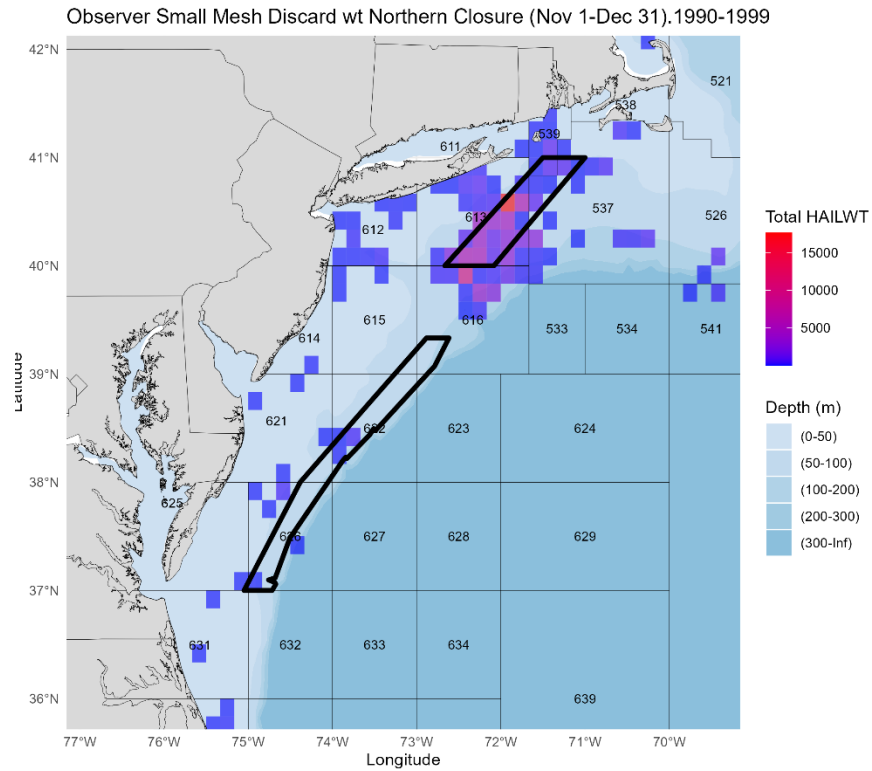


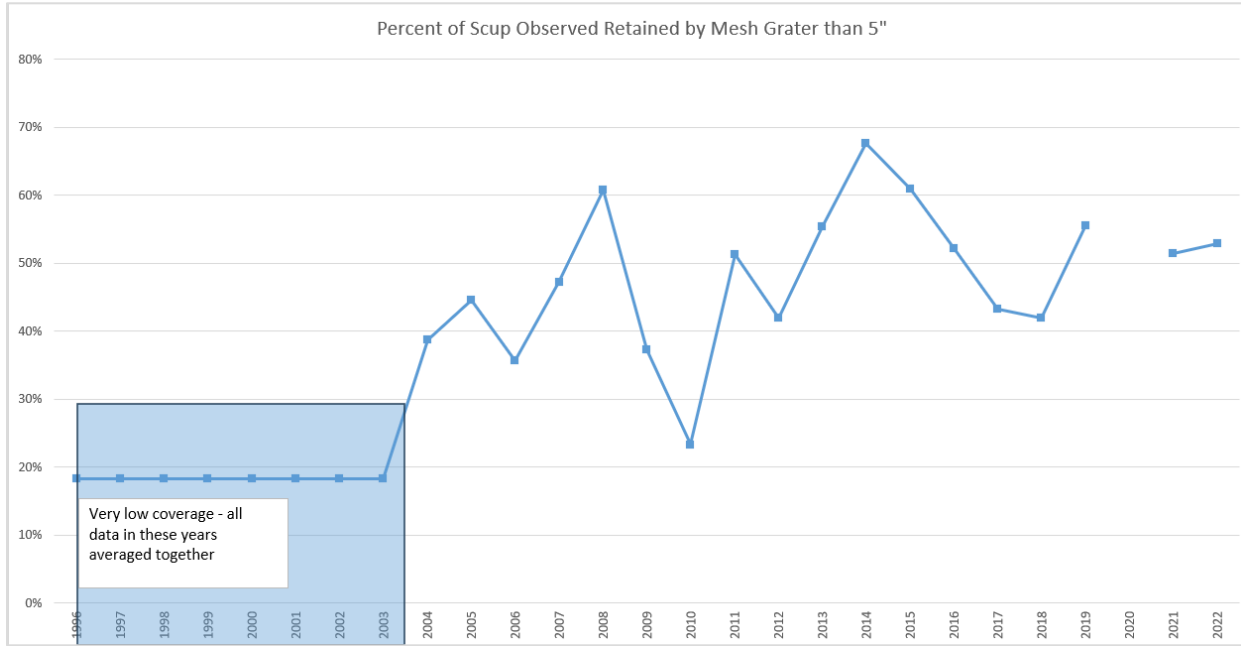
Figure 20: Commercial small mesh (less than 5") scup discards (mt) during November through December (when the Northern GRA closure occurs): prior to the implementation of the GRAs (left); shortly after implementation (top right); and in more recent years (bottom right). Data Source: Unpublished NMFS Observer Program data.

APPENDIX 2 – Mesh for Retained Scup

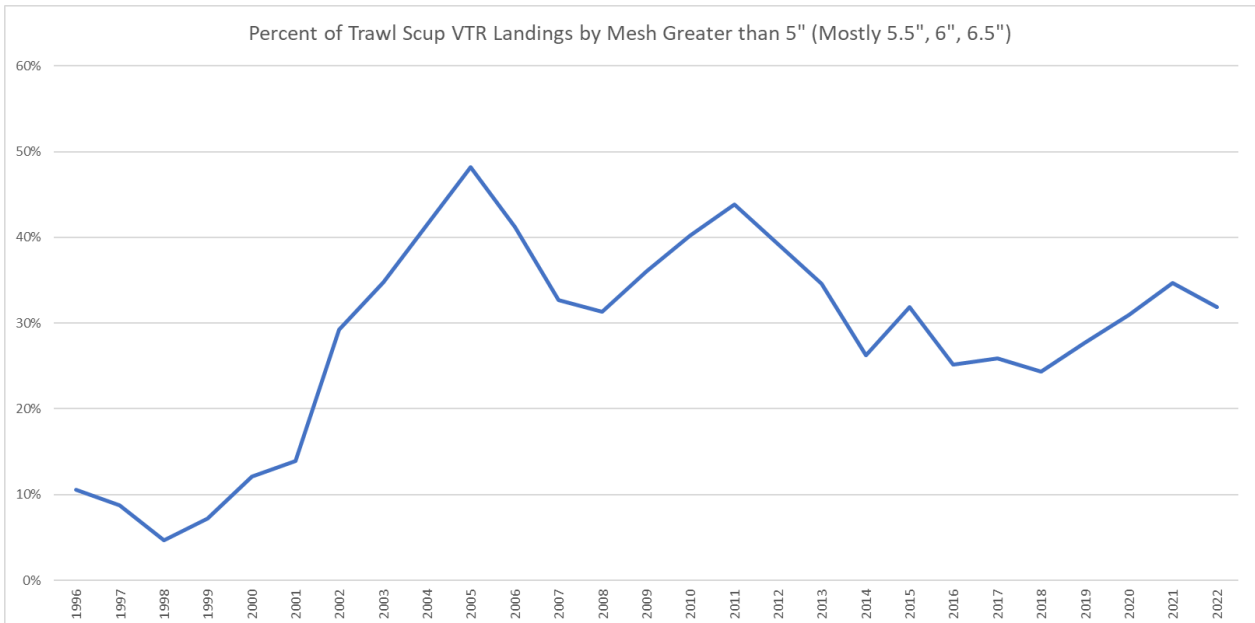
Source: Unpublished NMFS VTR and Observer Data

(VTR/Observer percentage scale differences are likely due to observer day deployment allocation targets among various fleets – they should not be directly compared)

Staff examined the proportion of retained scup by mesh greater than 5” in trawl observer data:



Staff examined the proportion of retained scup by mesh greater than 5” in Vessel Trip Report data:





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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 27, 2023
To: Council and Board
From: Julia Beaty, Staff
Subject: 2024 Black Sea Bass Specifications

On Tuesday, August 8, the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board will meet to adopt 2024 black sea bass specifications, including commercial and recreational catch and landings limits. They will also consider if changes are needed to the commercial management measures which can be modified through the specifications process.

Materials listed below are provided for consideration of this agenda item. Please note that some documents are behind separate tabs.

- 1) Executive summary of the July 2023 Scientific and Statistical Committee meeting (*behind Tab 16*)
- 2) Staff memo on 2024 black sea bass specifications dated July 18, 2023
- 3) Black Sea Bass Data Update for 2023
- 4) June 2023 Advisory Panel Fishery Performance Report and associated additional AP comments received through July 6, 2023 (*behind Tab 1*)
- 5) 2023 Black Sea Bass Fishery Information Document

To be posted separately once available:

- 1) Full report of the July 2023 Scientific and Statistical Committee meeting
- 2) Monitoring Committee meeting summary from July 27, 2023
- 3) Additional public comments received after July 26, if applicable



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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 18, 2023
To: Chris Moore, Executive Director
From: Julia Beaty, staff
Subject: 2024 Black Sea Bass Specifications

Executive Summary

This memorandum includes information to assist the Mid-Atlantic Fishery Management Council's (Council's) Scientific and Statistical Committee (SSC) and Monitoring Committee in recommending 2024 commercial and recreational catch and landings limits for black sea bass. The Monitoring Committee will also consider if changes are needed to any of the commercial management measures for 2024. Additional information on fishery performance and past management measures can be found in the 2023 Black Sea Bass Fishery Information Document and the 2023 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by advisors.¹

The Magnuson-Stevens Fishery Conservation and Management Act requires the Council's SSC to provide scientific advice for fishery management decisions, including recommendations for Acceptable Biological Catch limits (ABCs), prevention of overfishing, and achieving maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABCs recommended by the SSC.

The 2021 management track stock assessment provides the most recent stock status information for black sea bass. This assessment indicates that the stock was not overfished and overfishing was not occurring in 2019.² ABCs, commercial and recreational annual catch limits (ACLs) and annual catch targets (ACTs), commercial quotas, and Recreational Harvest Limits (RHLs) for 2022-2023 were set based on the results of this assessment. The 2023 ACLs, ACTs, commercial quota, and RHL were later revised to reflect changes in the commercial/recreational allocations. The final values for 2023 are shown in Table 1.

The SSC is tasked with recommending a 2024 ABC during their meeting on July 24-26, 2023. As there is no new information on stock status, staff recommend setting the 2024 ABC equal to the 2023 ABC of 16.66 million pounds (7,557 mt).

¹ Available at: <https://www.mafmc.org/fishery-performance-reports>. Note that some values in this document for commercial and recreational landings and dead discards for 2019-2022 may differ from the Fishery Information Document as updated data were provided by the Northeast Fisheries Science Center.

² Northeast Fisheries Science Center. 2022. Management Track Assessment June 2021. Northeast Fisheries Science Center reference document; 22-10. DOI: <https://doi.org/10.25923/4m8f-2g46>

During their July 27, 2023 meeting, the Monitoring Committee is tasked with recommending commercial and recreational ACLs and ACTs, a commercial quota, and RHL for 2024. Recreational bag, size, and season limits for 2024 will be considered this fall. Staff recommend setting the 2024 commercial and recreational ACLs and ACTs equal to the respective values implemented for 2023 (Table 1).

Commercial and recreational dead discard estimates for 2017-2019 were used to calculate the 2023 commercial quota and RHL. Staff recommend setting the 2024 commercial quota and RHL based on the same methodology used for 2023, updated with the most recent three years of catch data. This would result in a 2024 commercial quota of 6.00 million pounds (a 25% increase from the 2023 commercial quota of 4.80 million pounds) and a 2024 RHL of 6.27 million pounds (a 5% decrease from the 2023 RHL of 6.57 million pounds; Table 1).

The Monitoring Committee will also review the commercial management measures which can be modified through the specifications process, including the federal waters minimum fish size, minimum mesh size, and mesh exemption programs. Council staff recommend no revisions to these commercial management measures as there is no new information to suggest a change is needed.

The Council will meet jointly with the Atlantic States Marine Fisheries Commission’s Summer Flounder, Scup, and Black Sea Bass Management Board (Board) on Tuesday August 8, 2023 to review the recommendations of the SSC and Monitoring Committee, as well as input from the Advisory Panel, before adopting 2024 specifications and considering if changes are needed to the 2024 commercial management measures.

Table 1: Implemented 2023 specifications for black sea bass and staff recommendations for 2024 specifications based on currently available data. Numbers may not add precisely due to unit conversions and rounding.

Measure	2023		2024		Basis
	mil lb	mt	mil lb	mt	
OFL	17.01	7,716	No change from 2023 recommended		SSC recommendation based on 2021 management track assessment projections and Council risk policy
ABC	16.66	7,557			
Com. ACL	7.50	3,401	No change from 2023 recommended		45% of ABC (commercial allocation)
Com. ACT	7.50	3,401			Equal to the ACL; no deduction for management uncertainty
Projected com. dead discards	2.70	1,224	1.50	680	3-year average proportion of commercial dead catch that was discarded applied to the commercial ACL (i.e., 36% based on 2017-2019 for 2023 and 20% based on 2020-2022 for 2024)
Com. quota	4.80	2,177	6.00	2,721	Com. ACT minus projected com. dead discards
Rec. ACL	9.16	4,156	No change from 2023 recommended		55% of ABC (recreational allocation)
Rec. ACT	9.16	4,156			Equal to the ACL; no deduction for management uncertainty
Projected rec. dead discards	2.59	1,175	2.89	1,311	See page 13 for methodology, uses 2017-2019 discards data for 2023 and 2020-2022 for 2024
RHL	6.57	2,981	6.27	2,845	Rec. ACT minus projected rec. dead discards

Stock Status and Biological Reference Points

The most recent stock status information for black sea bass is available from a management track assessment which was peer reviewed and accepted in June 2021. This assessment incorporated fishery data and fishery-independent survey data through 2019. Data from 2020 were not incorporated due to significant gaps in some data sets due to the COVID-19 pandemic and the time required to consider how to best address those gaps. As with the 2016 benchmark and subsequent updates, terminal year estimates of spawning stock biomass, fishing mortality, and recruitment were adjusted for internal model retrospective error. The retrospectively adjusted values are compared against the reference points and used in management.

Due to the lack of a stock/recruit relationship, a direct calculation of maximum sustainable yield (MSY) and associated reference points (F and SSB) is not feasible and proxy reference points were used. SSB calculations and SSB reference points account for mature males and females.

The 2021 management track assessment indicated that the black sea bass stock was not overfished and overfishing was not occurring in 2019. Spawning stock biomass in 2019 was estimated at about 2.1 times the target level. Fishing mortality in 2019 was estimated to be 15% below the threshold level that defines overfishing (Table 2, Figure 1, Figure 2).

According to the 2021 management track assessment, the 2011 year class (i.e., fish spawned in 2011) was estimated to be the largest in the time series and the 2015 year class was the second largest. The 2017 year class was well below the 1989-2018 average, but the 2018 year class was above average at (Figure 2). The 2018 year class is the most recent year class for which estimates are currently available.

The NEFSC provides “data updates” in the interim years between management track assessments. Data updates include information on fishery catches and fishery-independent survey indices through the prior year. A data update with fishery catch and survey indices through 2022 is expected to be provided in time for the July 2023 SSC and Monitoring Committee meetings.

A research track assessment is currently in development and is scheduled for peer review in October 2023. Stock status will be updated through a subsequent management track assessment in June 2024.

Table 2: Black sea bass biological reference points from the 2021 management track stock assessment.

	Spawning stock biomass	Fishing mortality rate (F)
Target	31.84 mil lb (14,441 mt)	N/A
Threshold	15.92 mil lb (7,221 mt)	0.46
Terminal year estimate (2019)	65.53 mil lb (29,769 mt) ^a 2.1 times target level	0.39 ^a 15% below threshold level
Status	Not overfished	Overfishing not occurring

^a Adjusted for retrospective bias

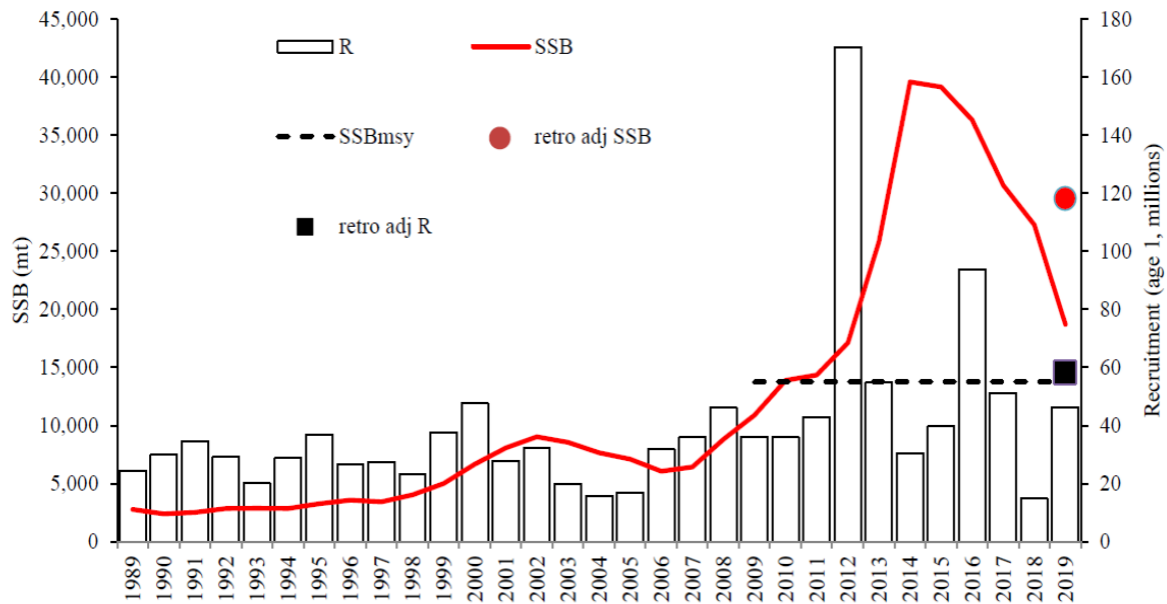


Figure 1: Black sea bass spawning stock biomass (SSB; solid line) and recruitment at age 1 (R; vertical bars), 1989-2019. The horizontal dashed line is the updated SSB_{MSY} proxy = $SSB_{40\%}$ = 14,441 mt. SSB and recruitment estimates for 2019 were adjusted for a retrospective pattern in the stock assessment (red circle and black square, respectively). Adjusted values are used in management. Source: 2021 management track assessment.

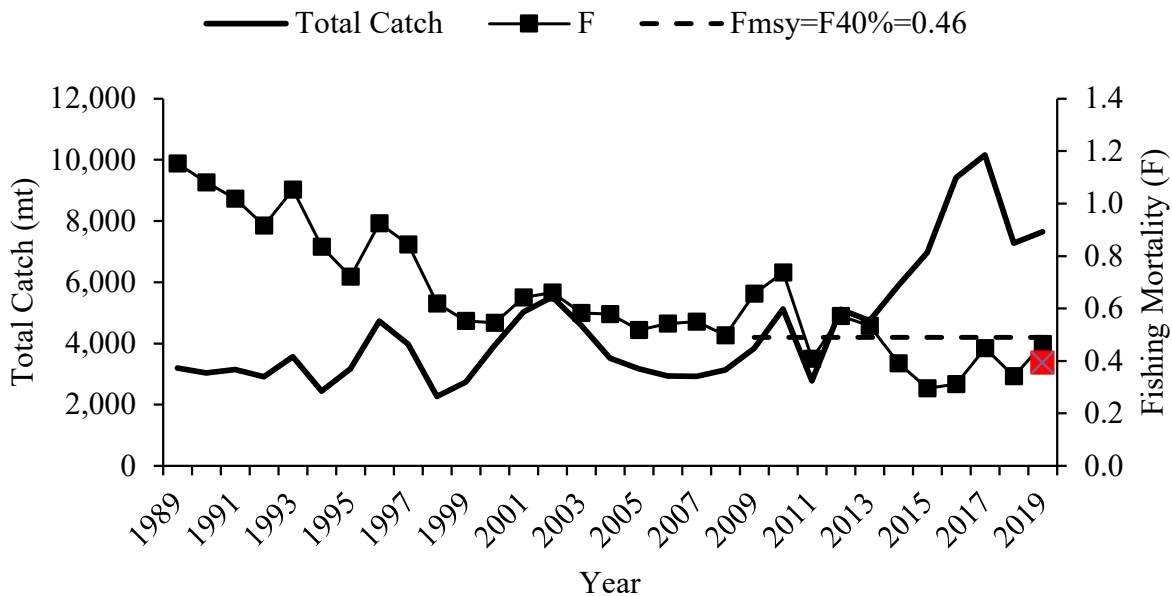


Figure 2: Total fishery catch (metric tons; mt; solid line) and fishing mortality (F, peak at age 6-7; squares) for black sea bass. The horizontal dashed line is the updated F_{MSY} proxy = $F_{40\%}$ = 0.46. The red square is the retrospectively adjusted fishing mortality value for 2019. The adjusted value is used in management. Source: 2021 management track assessment.

Recent Catch and Fishery Performance

Total Dead Catch

Table 3 shows the black sea bass ABCs from 2010 through 2023, as well as the overfishing limit (OFL), from which the ABC is derived when possible. The ABC is set less than or equal to the OFL to account for scientific uncertainty. As shown in Table 3, ABC overages occurred in many years; however, OFL overages have been rare. Depending on the year, the ABC overages were driven by higher than anticipated discards in one or both of the commercial and recreational sectors and/or recreational harvest exceeding the RHL (Table 4, Table 5).

Table 3: Total dead catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC, 2014-2023. All values are in millions of pounds. The recreational contribution to total dead catch is based on data in the “old” MRIP units through 2019 and the revised MRIP data starting in 2020. Catch limits did not account for the revised MRIP data until 2020.

Year	Total dead catch^a	OFL^b	OFL overage/underage	ABC^b	ABC overage/underage
2013	5.99	NA	NA	5.50	+9%
2014	7.92	NA	NA	5.50	+44%
2015	7.92	NA	NA	5.50	+44%
2016	10.66	NA	NA	6.67	+60%
2017	11.70	12.05	-3%	10.47	+12%
2018	9.97	10.29	-3%	8.94	+12%
2019	9.64	10.29	-6%	8.94	+8%
2020	17.33	19.39	-11%	15.07	+15%
2021	21.35	17.68	+21%	17.45	+22%
2022	18.46	19.56	-6%	18.86	-2%
2023	--	17.01	--	16.66	--

^a See Table 4 and Table 5 for the commercial and recreational data contributing to the total catch estimates.

^b An OFL was not used and the ABC was set based on a constant catch approach during 2010-2015 due to the lack of a peer reviewed and accepted stock assessment. The 2016 ABC was set based on a data limited methodology. Starting with 2017, the ABC has been set based on a peer reviewed and approved stock assessment.

Commercial Catch

In 2022, about 5.35 million pounds of black sea bass were landed in the commercial fishery, the highest commercial landings in the time series of available data from 1981 through 2022. The 2022 commercial quota of 6.47 million pounds was higher than any previous quota (Table 4). Commercial black sea bass landings were lowest in 2009, when 1.18 million pounds were landed and the lowest quota in the time series was implemented (1.09 million pounds).

Commercial quota overages have been rare; however, ACL overages occurred each year during 2013-2019 based on higher than expected discards. As described on pages 12-13 the method for calculating projected dead discards was revised starting with the 2021 specifications in an attempt to address this issue. Commercial ACL overages have not occurred since 2019 due to a combination of landings falling below the quota and discards falling below the projected amount. Commercial landings were generally close to the quota through 2019. The quota increased by about 59% in 2020. Although landings have continued to increase, they have been 25-39% below the higher quotas since 2020 (Table 4).

Based on data reported through July 13, 2023, 2.22 million pounds of black sea bass have been landed by commercial fishermen from Maine through Cape Hatteras, NC in 2023, corresponding

to about 46% of the 2023 commercial quota of 4.80 million pounds. Landings in 2023 to date are slightly below 2022 landings at the same time of year.³ This is likely in response to the lower quota in 2023 (4.80 million pounds) compared to 2022 (6.47 million pounds). States adjust their commercial management measures as needed to ensure that their allocations of the coastwide quota are not exceeded prior to the end of the year.

Table 4: Black sea bass commercial landings, dead discards, and dead catch compared to the commercial quota, projected commercial dead discards, and commercial ACL, 2014-2023. All values are in millions of pounds.

Year	Com. landings ^a	Com. quota ^b	Quota over/under	Com. dead discards ^c	Projected com. dead discards	Disc. over/under	Com dead catch	Com. ACL	ACL over/under
2014	2.40	2.17	+11%	1.01	0.36	+181%	3.41	2.60	+31%
2015	2.38	2.21	+8%	0.93	0.39	+138%	3.31	2.60	+27%
2016	2.59	2.71	-4%	1.67	0.44	+280%	4.26	3.15	+35%
2017	4.01	4.12	-3%	2.26	0.97	+133%	6.27	5.09	+23%
2018	3.46	3.52	-2%	1.59	0.83	+92%	5.05	4.35	+16%
2019	3.48	3.52	-1%	2.20	0.83	+165%	5.68	4.35	+31%
2020	4.20	5.58	-25%	1.03	1.40	-27%	5.22	6.98	-25%
2021	4.77	6.09	-22%	1.08	3.43	-69%	5.84	9.52	-39%
2022	5.35	6.47	-17%	1.39	3.63	-62%	6.74	10.10	-33%
2023	--	4.80	--	--	2.70	--	--	7.50	--

^a NMFS commercial dealer data through 2018. Catch Accounting and Monitoring System (CAMS) data for 2019-2022.

^b The 2014 commercial quota reflects a 3% deduction for Research Set Aside.

^c Estimates through 2018 are based on NEFSC data as provided in 2021 management track assessment. CAMS data for 2019-2022.

Recreational Catch

According to the most recent data from the Marine Recreational Information Program (MRIP), between 1981 and 2021, recreational catch (landings and live and dead discards) of black sea bass from Maine through Cape Hatteras, NC was lowest in 1984 at 4.73 million fish and was highest in 2021 at 42.67 million fish. Recreational harvest in weight was highest in 2016 at 12.05 million pounds;⁴ however, harvest in numbers of fish was highest in 1986 at 19.28 million fish. Recreational harvest in weight was lowest in 1981 at 1.53 million pounds, while harvest in numbers of fish was lowest in 1998 at 1.56 million fish. A recent time series of recreational harvest and discards is shown in Table 5.

Recreational harvest in 2022 was estimated at 8.14 million pounds, about 21% above the 2022 RHL of 6.74 million pounds. As shown in Table 5, RHL and recreational ACL overages have been frequent in recent years. When considering the scale of these overages, it is important to note that the catch and landings limits for both sectors were not set based on a peer reviewed and accepted stock assessment until 2017. Previous RHLs were likely lower than they could have

³ Based on data available at <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>

⁴ The coastwide 2016 and 2017 MRIP estimates for black sea bass are viewed as outliers by the Monitoring and Technical Committees and the SSC due to the influence of very high estimates in individual states and waves (i.e., New York 2016 wave 6 for all modes and New Jersey 2017 wave 3 for the private/rental mode).

been had an approved stock assessment been available to set catch and landings limits that were reflective of biomass levels at that time. In addition, the notable 2020 and 2021 RHL overages were the result of the Council and Board leaving the bag, size, and season limits unchanged despite expected overages. This was a short-term approach to prevent major negative impacts to the recreational sector while changes to management were considered through the Commercial/Recreational Allocation Amendment and the Recreational Harvest Control Rule Framework/Addenda.

MRIP estimates for 2023 are currently only available through wave 2 (March/April). These data do not provide meaningful insights into the 2023 recreational black sea bass fishery given that the recreational fishery was closed through at least May 15 in all states except New Hampshire.

Table 5: Black sea bass recreational landings, dead discards, and dead catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Values are provided in the “old” MRIP units for 2014-2019 and the “new” MRIP units for 2020-2023 as 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	Version of MRIP data	Rec. harvest ^a	RHL ^b	RHL over/under	Rec. dead disc. ^c	Projected rec. dead discards	Rec. discards overage/underage	Rec. dead catch	ACL	ACL over/under
2014	Old MRIP (pre-revision)	3.67	2.26	62%	0.84	0.50	+68%	4.51	2.90	+56%
2015		3.79	2.33	63%	0.82	0.57	+44%	4.61	2.90	+59%
2016		5.19	2.82	84%	1.21	0.57	+112%	6.40	3.52	+82%
2017		4.16	4.29	-3%	1.27	0.57	+123%	5.43	5.38	+1%
2018		3.82	3.66	4%	1.10	0.70	+57%	4.92	4.59	+7%
2019		3.46	3.66	-5%	0.5	1.09	-54%	3.96	4.59	-14%
2020 ^d	New MRIP (post-revision)	9.05	5.81	56%	3.06	0.93	+229%	12.11	8.09	+50%
2021		11.97	6.34	89%	3.54	0.93	+280%	15.51	7.93	+96%
2022		8.14	6.74	21%	3.59	2.02	+78%	11.73	8.76	+34%
2023		--	6.57	--	--	--	--	--	9.16	--

^a Based on MRIP data through 2017. Values for 2018 and 2019 were provided by GARFO.

^b The 2014 RHL reflects a 3% deduction for Research Set Aside.

^c Estimates for 2014-2017 are from data update provided by the NEFSC in 2018 (most recent data from NEFSC in “old” MRIP units; available at <https://www.mafmc.org/ssc-meetings/2018/july-17-18>). Values for 2018 and 2019 were provided by GARFO. Estimates for 2020-2022 were provided by the NEFSC with the 2023 data update.

^d Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to COVID-19. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019. For black sea bass, the 2020 harvest estimate for Maine-Virginia relied on approximately 17% imputed data. For more information on imputation methods see: <https://www.mafmc.org/s/1-2020-Marine-Recreational-Catch-Estimates-QA-52121.pdf>.

Review of Prior SSC Recommendations

In July 2021, the SSC recommended 2022 and 2023 ABCs for black sea bass based the Council's ABC control rule and risk policy, using stock status information and projections provided with the 2021 management track assessment. This remains the most recent stock assessment and the most recent stock projections. The SSC reviewed their 2023 ABC recommendation in July 2022 and agreed that no changes were needed.

In setting the 2022-2023 ABCs, the SSC maintained use of a 100% OFL coefficient of variance (CV). The following text was copied directly from the SSC's July 2021 meeting summary⁵ and describes their rationale for applying a 100% OFL CV:

- There is a strong retrospective bias present in the assessment results and this pattern differs between the two spatial sub-areas.
- The fishery has a large recreational component (~60-80% of total harvest in recent years), and thus a substantial reliance on MRIP. Updated MRIP numbers differ substantially from the old estimates, and the updated estimate for one year (2016) was considered implausible owing to high variance in wave-specific data.
- Spatially explicit models were implemented in the 2016 benchmark assessment, and there were detailed efforts to explore the consequences of the misspecification of the spatial resolution of these models on perceptions of stock status.
- There were broadly consistent patterns in the fishery independent indices.

The SSC also noted that retrospective bias had increased since the 2019 management track assessment and uncertainty in the 2020 recreational harvest and dead discards are high because of COVID-related disruptions to the MRIP survey in 2020.

The projections used by the SSC to calculate the 2022-2023 OFLs and ABCs assumed that recreational harvest in 2021 would be the same as in 2020. This resulted in an expected RHL overage. The projections also assumed that the commercial sector would catch their full ACL without overages. Therefore, the assumed RHL overage resulted in an assumed 2021 ABC overage. The SSC agreed that this was an appropriate assumption given recent trends in recreational harvest and given that the Council and Board maintained status quo recreational measures in 2020 and 2021 despite expected RHL overages.

The SSC recommended variable ABCs across 2022-2023 because the revisions to the Council's risk policy adopted in 2019 resulted in a greater than 50% probability of overfishing in one year when averaged ABCs were used. The ABCs recommended by the SSC are shown in Table 6.

The SSC determined the following to be the most significant sources of scientific uncertainty associated with determination of the 2022-2023 OFLs and ABCs in July 2021:

- The retrospective pattern was large enough to need the corrections (outside the 90% confidence intervals), and the additional uncertainty caused by applying the correction is unclear. The model for the northern sub-area has a larger retrospective pattern than the model for the southern sub-area.
- The natural mortality rate (M) used in the assessment — because of the unusual life history strategy, the current assumption of an equal M in the assessment model for both sexes — may not adequately capture potential sex-based differences in M.

⁵ Available at: <https://www.mafmc.org/ssc-meetings/2021/july21-23>

- The spatial distribution of productivity within the stock range.
- The level, temporal pattern, and spatial distribution of recreational catches.
- The nature of exchanges between the spatial regions defined in the assessment model.
- The extent to which the spatial structure imposed reflects the dynamics within the stock.
- The combination of the values from the northern and southern sub-areas is conducted without weighting based on landings or biomass. It is unclear whether or how the uncertainty should be treated when the biological reference points are combined using simple addition.
- Future effects of temperature on stock productivity and range are highly uncertain.
- Estimates of 2020 harvest and dead discards in both the recreational and commercial sectors are highly uncertain because of COVID-related pauses in observer coverage and MRIP intercept surveys.

Table 6: 2022-2023 black sea bass OFLs and ABCs recommended by the SSC in July 2021, as well as associated fishing mortality rates (F), probability of overfishing (p*), spawning stock biomass (SSB), and projected biomass compared to target level (SSB/SSB_{MSY}).

Year	OFL		ABC		ABC F	ABC p*	SSB		SSB/ SSB _{MSY}
	MT	Mil. lb	MT	Mil. lb			MT	Mil. lb	
2022	8,735	19.56	8,555	18.86	0.41	0.49	22,637	49.91	1.57
2023	7,716	17.01	7,557	16.66	0.41	0.49	19,538	43.07	1.35

Staff Recommendations for 2024 ABC

In the absence of updated stock assessment information, staff recommend setting the 2024 ABC equal to the 2023 ABC of 16.66 million pounds (7,557 mt). The 2023 ABC was set based on stock projections using the 2021 management track assessment model. These remain the most recent projections available for black sea bass. As noted above, a research track assessment is currently underway and updated projections will be provided with a management track assessment in 2024 for use in setting 2025-2026 ABCs. Given the very healthy stock status and the ability to respond to an improved stock assessment for 2025 specifications, setting the 2024 ABC equal to the 2023 ABC may be a low-risk approach.

Sector Specific Catch and Landings Limits

Recreational and Commercial ACLs

The commercial/recreational allocations for black sea bass were revised via Amendment 22 to the Fishery Management Plan (FMP), effective in 2023. Under the revised allocations, the commercial ACL is now 45% of the ABC and the recreational ACL is 55% of the ABC (Figure 3).

If the SSC agrees to set the 2024 ABC equal to the 2023 ABC, this would result in a status quo commercial ACL of 7.50 million pounds (3,401 mt) and a recreational ACL of 9.61 million pounds (4,156 mt).

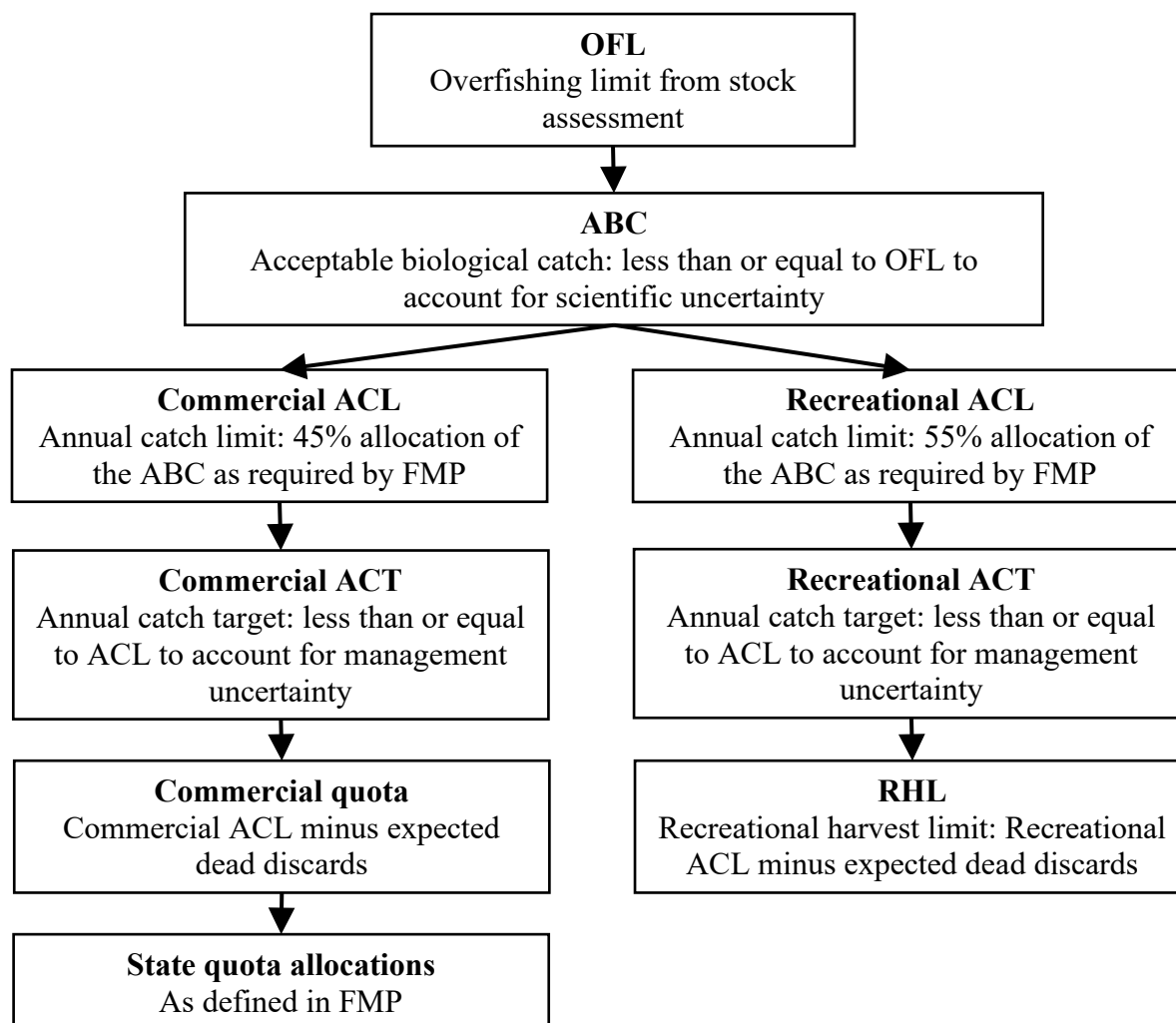


Figure 3: Black sea bass catch and landings limits, reflecting the revised commercial/recreational allocations which became effective in 2023.

Recreational and Commercial ACTs

ACTs are set less than or equal to the sector-specific ACLs to account for management uncertainty (Figure 3). Management uncertainty is comprised of two parts: uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e., estimation errors). Management uncertainty can occur due to a lack of sufficient information about catch (e.g., due to late reporting, underreporting, and/or misreporting of landings or discards) or due to a lack of management precision (i.e., the ability to constrain catch to desired levels). The Monitoring Committee should consider all relevant sources of management uncertainty in the black sea bass fishery when recommending ACTs. Based on the considerations described below for each sector, staff recommend no deduction from the 2024 commercial and recreational ACLs to the ACTs to account for management uncertainty.

Recreational harvest is estimated through a statistical survey design (i.e., the MRIP program), as opposed to mandatory vessel and dealer reporting in the commercial fishery which is more of a census of the entire commercial fishery. The commercial fisheries are also mostly limited access (with some exceptions at the state level) and the commercial fisheries can be closed in-season when landings approach the quota. The recreational fisheries for these species are all open access and there is no in-season closure authority due to the timing of recreational data availability. For

these reasons, recreational landings can be more difficult to constrain and predict than commercial landings.

The commercial quota monitoring system has largely been successful in preventing quota overages. As shown in Table 4, commercial landings have not exceeded the quota since 2015. Commercial ACL overages during 2016 through 2019 were the result of higher than expected commercial dead discards. Revisions to the projected discard methodology were made starting with the 2021 specifications to address this issue. Commercial ACL overages have not occurred since 2019 due to both landings falling below the quotas, which increased by about 59% in 2020, and discards falling below the projected amount.

When considering the scale of the RHL overages and underages shown in Table 5, it is important to note that the catch and landings limits for both sectors were not set based on a peer reviewed and accepted stock assessment until 2017. Previous RHLs were likely lower than they could have been had an approved stock assessment been available to set catch and landings limits that were reflective of biomass levels at that time. In addition, the notable 2020 and 2021 RHL overages were the result of the Council and Board leaving the bag, size, and season limits unchanged despite expected overages. This was a short-term approach to prevent major negative impacts to the recreational sector while changes to management were considered through the Commercial/Recreational Allocation Amendment and the Recreational Harvest Control Rule Framework/Addenda.

The Percent Change Approach and the use of a new recreational harvest estimation model (the Recreational Demand Model) were both applied to the development of recreational black sea bass measures in 2023 for the first time. This required changes in the black sea bass measures to achieve a 10% reduction in harvest compared to predicted 2023 harvest under 2022 measures. As previously stated, it is not possible to predict 2023 recreational harvest based on currently available data.

The Percent Change Approach considers the RHL in the upcoming year(s) as well as biomass compared to the target level when setting measures. In some cases, RHL and ACL overages are permitted under this approach. In other cases, this approach requires more restrictive measures than would be needed to prevent RHL and ACL overages. The Percent Change Approach will sunset after the 2025 fishing year with the goal of using an improved process for setting 2026 recreational measures. A management action to consider the appropriate replacement for the Percent Change Approach is currently in development.

Additionally, a separate amendment is under development to consider managing for-hire recreational fisheries separately from other recreational fishing modes (referred to as sector separation) and improvements to recreational catch accounting.

Given these ongoing management actions, staff recommend no buffer for management uncertainty in the recreational fishery, consistent with past practice for this fishery.

Projected Commercial Dead Discards and Commercial Quota

Projected commercial dead discards are subtracted from the commercial ACT to derive the commercial quota (Figure 3). The methodology to calculate projected dead discards is not prescribed in the FMP and can be modified on an annual basis.

Starting with the 2021 specifications, commercial black sea bass dead discards have been projected based on an assumption that commercial dead discards as a proportion of total dead commercial catch would be equal to the average proportions during the most recent three years

of available data. This method aimed to address the issue of past under-prediction of commercial discards (Table 4) and reduce the frequency of ACL overages due to discards. As previously stated, the commercial ACL has not been exceeded since 2019 due to a combination of landings falling below the quota, which increased by about 59% in 2020, and discards falling below the projected amounts.

Data provided with the 2021 management track assessment indicated that on average during 2017-2019, 36% of commercial dead catch was discarded (Table 4). Applying this percentage to the 2023 commercial ACL resulted in 2.70 million pounds of projected commercial dead discards and a 2023 commercial quota of 4.80 million pounds.

Staff recommend setting the 2024 commercial quota based on the same methodology used for prior years, updated with the most recent three years of landings and dead discard estimates. Based on the currently available data (Table 4), commercial dead discards in 2020-2022 averaged 20% of commercial dead catch, compared to the 36% average based on 2017-2019 data. Applying this revised percentage to the recommended 2024 commercial ACL of 7.50 million pounds results in a projected discard estimate of 1.50 million pounds. This value would result in a 2024 commercial quota of 6.00 million pounds, a 25% increase over the 2023 commercial quota of 4.80 million pounds (Table 1).

Projected Recreational Dead Discards and Recreational Harvest Limit

Projected recreational dead discards are subtracted from the recreational ACT to derive the RHL (Figure 3). The methodology to calculate projected dead discards is not prescribed in the FMP and can be modified on an annual basis.

When setting the 2023 specifications, the Council and Board agreed to use a different method for projecting recreational dead discards compared to commercial dead discards. The adopted method for the recreational fishery aimed to address concerns that the previous method could have under-estimated recreational dead discards in 2023 and to avoid the assumption that recreational catch will be equal to the ACL. Given recent levels of recreational dead catch compared to the ACL (Table 5) and the new process used to set recreational measures (i.e., the Percent Change Approach), the Council and Board agreed that it may not be reasonable to assume that recreational catch in 2023 would be equal to the ACL.

The Council and Board considered input from the Monitoring Committee on two potential methods for projecting recreational dead discards and ultimately agreed to use an average of the two approaches. The first method would have set projected 2023 recreational dead discards to the most recent three-year average (i.e., 3.04 million pounds based on 2017-2019). The second method is the same as described above for the commercial fishery, producing an estimate of 2.14 million pounds (based on 2017-2019 average proportions). The first method does not rely on an assumption that catch will be equal to the ACL and resulted in a higher estimate than the second method. Some Monitoring Committee members thought this higher estimate was more appropriate given recent trends in dead discards; however, other Monitoring Committee members thought discards may decrease below recent levels given the increased ACL in 2023. They also supported maintaining the prior method for an additional year given that it was not possible at the time to evaluate how well it predicted discards given that it was first used in 2021 and dead discard estimates in weight were only available through 2019. The Council and Board agreed that both approaches recommended by the Monitoring Committee had logical rationales. They also agreed that discards in 2023 could fall between these two estimates; therefore, they decided to use an average of these two approaches.

Staff recommend setting the 2024 RHL based on the same methodology used for the 2023 RHL, updated with the most recent three years of harvest and dead discard estimates. This results in a projected dead discard estimate of 2.89 million pounds (Table 7). Subtracting this value from the recommended 2024 recreational ACT of 9.16 million pounds results in a 6.27 million pound RHL for 2024. This would represent a 4% decrease from the 2023 RHL of 6.57 million pounds (Table 1).

Table 7: Recreational ACL, projected recreational dead discards, and resulting RHL as implemented in 2023 and as revised based on the most recent discard data available at the time of finalizing this document (Table 5). All values are in millions of pounds.

Measure	Implemented for 2023	2023 method updated based on most recent 3 years of data	Projected discards set to most recent 3-yr avg.	Discards as proportion of catch based on most recent 3-yr avg. proportion
Rec. ACL	9.16	9.16	9.16	9.16
Projected rec. dead discards	2.59	2.89 ^a	3.40 based on 2020-2022	2.38 26% of ACL based on 2020-2022
RHL	6.57	6.27	5.76	6.78

^a As described in the text above, this value is the average of values in next two columns.

Commercial Management Measures

Federal regulations include several commercial management measures which can be modified through the annual specifications process. These measures are summarized below. Council staff recommend no changes to these measures for 2024 as there is no new information to suggest changes are needed. Advisors did not recommend any changes for 2024.

The commercial minimum fish size in federal waters is 11 inches. This measure has remained unchanged since 2002.

Trawl vessels which possess 500 pounds or more of black sea bass from January 1 through March 31, or 100 pounds or more from April 1 through December 31, must fish with nets that have a minimum mesh size of 4.5-inch diamond mesh throughout the codend for at least 75 continuous meshes forward of the terminus of the net. For codends with less than 75 meshes, the entire net must have a minimum mesh size of 4.5-inch diamond mesh. These measures have been unchanged since 2002. Hasbrouck et al. (2018) confirmed that the current minimum mesh sizes are effective at releasing most fish smaller than the commercial minimum size. This study also considered the potential for a common minimum mesh size for black sea bass, scup, and summer flounder. The results were not able to identify an effective common mesh size for all three species at the current size limits; however, the authors concluded that a common mesh size of 4.5 or 5 inches diamond for scup and black sea bass would be effective at releasing undersized fish.⁶ Further consideration of a shared minimum mesh size has not been prioritized by the Council and Board.

⁶ Hasbrouck, E., S. Curatolo-Wagemann, T. Froelich, K. Gerbino, D. Kuehn, P. Sullivan, J. Knight. 2018. Determining Selectivity and Optimum Mesh Size to Harvest Three Commercially Important Mid-Atlantic Species - A Report to the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission. Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf

Pot/trap regulations include minimum vent sizes of 2.5 inches in diameter if circular, 1.375 inches x 5.75 inches for rectangular vents, and 2 inches for square vents remained unchanged. In addition, two vents are required in the parlor portion of the pot/trap. These regulations have been unchanged since 2007.

Recreational Management Measures

Framework 17, which implemented the Percent Change Approach, states “the Council and Board would consider adjusting measures in sync with the setting of catch and landings limits in response to updated stock assessment information. It is anticipated that updated stock assessments will be available every other year for all four species. In the interim year, measures would be reviewed and may be modified if new data suggest a major change in the expected impacts of those measures on the stock or the fishery.”

A previously planned management track assessment for black sea bass was delayed from June 2023 to June 2024 to allow more time for the ongoing Research Track Assessment to thoroughly develop and evaluate new assessment approaches. This has resulted in a longer time between management track assessments for black sea bass than was anticipated during Framework 17.

Under the staff recommendations described above, the RHL would be revised based on updated discard projections accounting for two additional years of catch data. As previously stated, no new stock status information is available. The Monitoring Committee will meet in the fall of 2023 to consider the best approach for setting recreational management measures following the Percent Change Approach.

Black Sea Bass Data Update for 2023

National Marine Fisheries Service
Northeast Fisheries Science Center
166 Water St.
Woods Hole, MA 02543

Reported 2022 landings in the commercial fishery were 2,425 mt, an increase of 12% from 2021 (2,162 mt) and 83% of the 2022 commercial quota (2,934 mt). Estimated 2022 discards in the commercial fishery were 631 mt, an increase of 29% from 2021 (489 mt). Estimated 2022 landings in the recreational fishery were 3,693 mt, a decrease of 32% from 2021 (5,435 mt) and 121% of the 2022 recreational harvest limit (3,055 mt). Estimated 2022 discards in the recreational fishery were 1,627 mt, an increase of 1% from 2021 (1,605 mt). Consequently, total combined commercial and recreational catches were 8,376 mt for 2022.

Relative abundance derived from the NEFSC spring bottom trawl survey has generally increased since 2015 (note that the 2020 index is based on an incomplete survey), though the mean number-per-tow decreased slightly from 2021 to 2022 (Figure 2). The large 2011 cohort was apparent in the 2013 aggregate index as well as age compositions from 2012-2017 (Figure 3). Age composition data also show above average 2015, 2016 and 2019 cohorts (Figure 3).

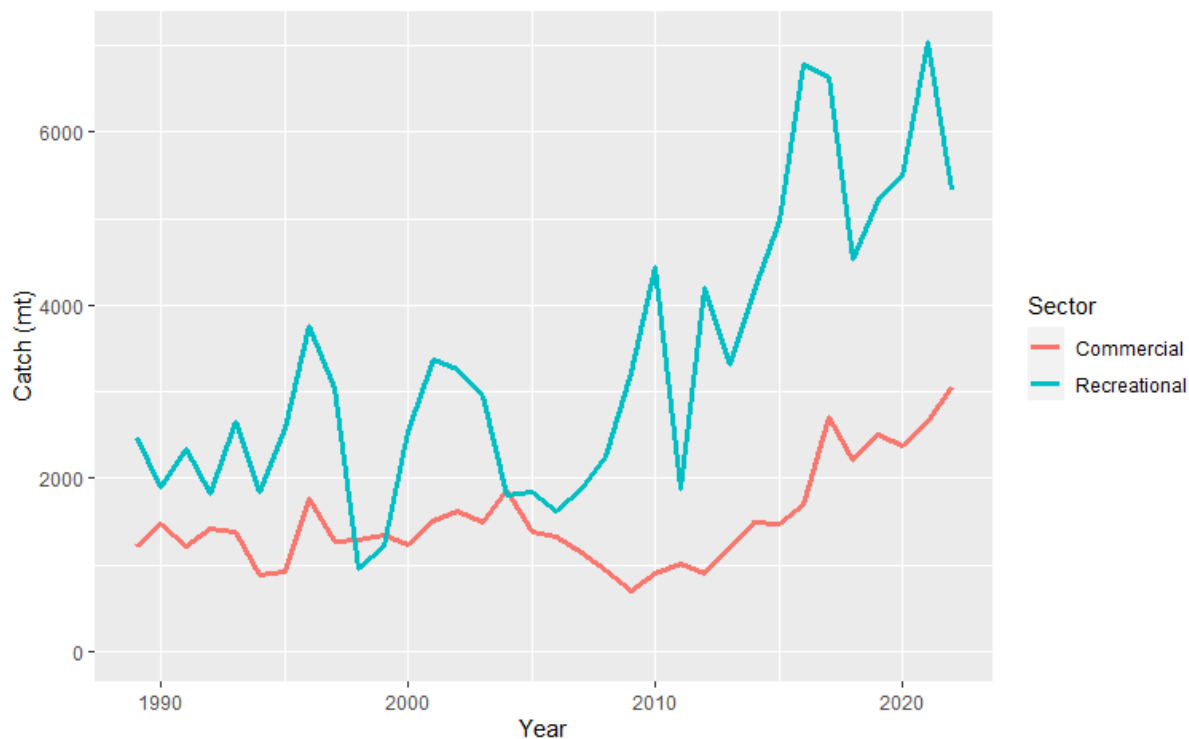
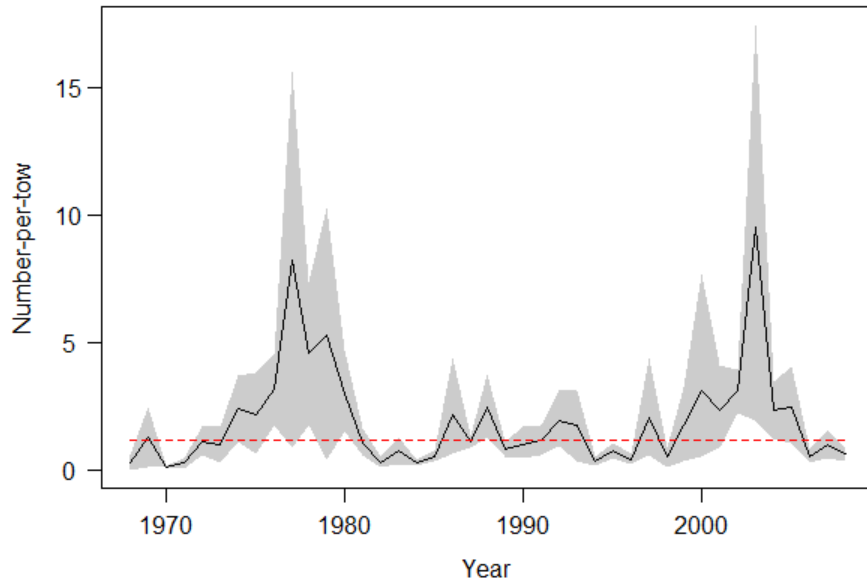


Figure 1. Black Sea Bass total fishery landings for 1989-2022.

a)



b)

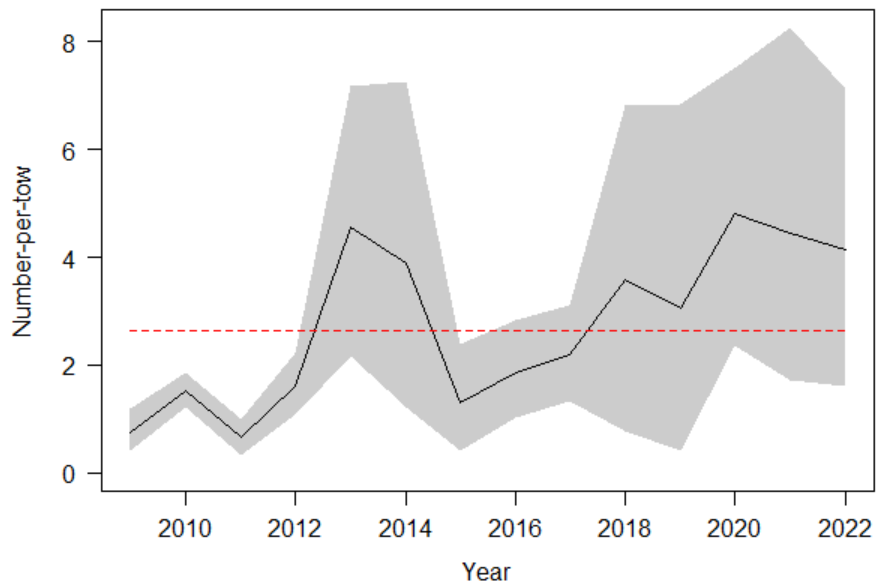


Figure 2. Black sea bass relative abundance (stratified mean number-per-tow \pm 90% CI) derived from the NEFSC spring bottom trawl survey for the SV Albatross IV years of 1968-2008 (a) and the H. B. Bigelow years of 2009-2022 (b). The 2020 index is based on an incomplete survey. The red dotted line represents the median number-per-tow of each time series.

a)

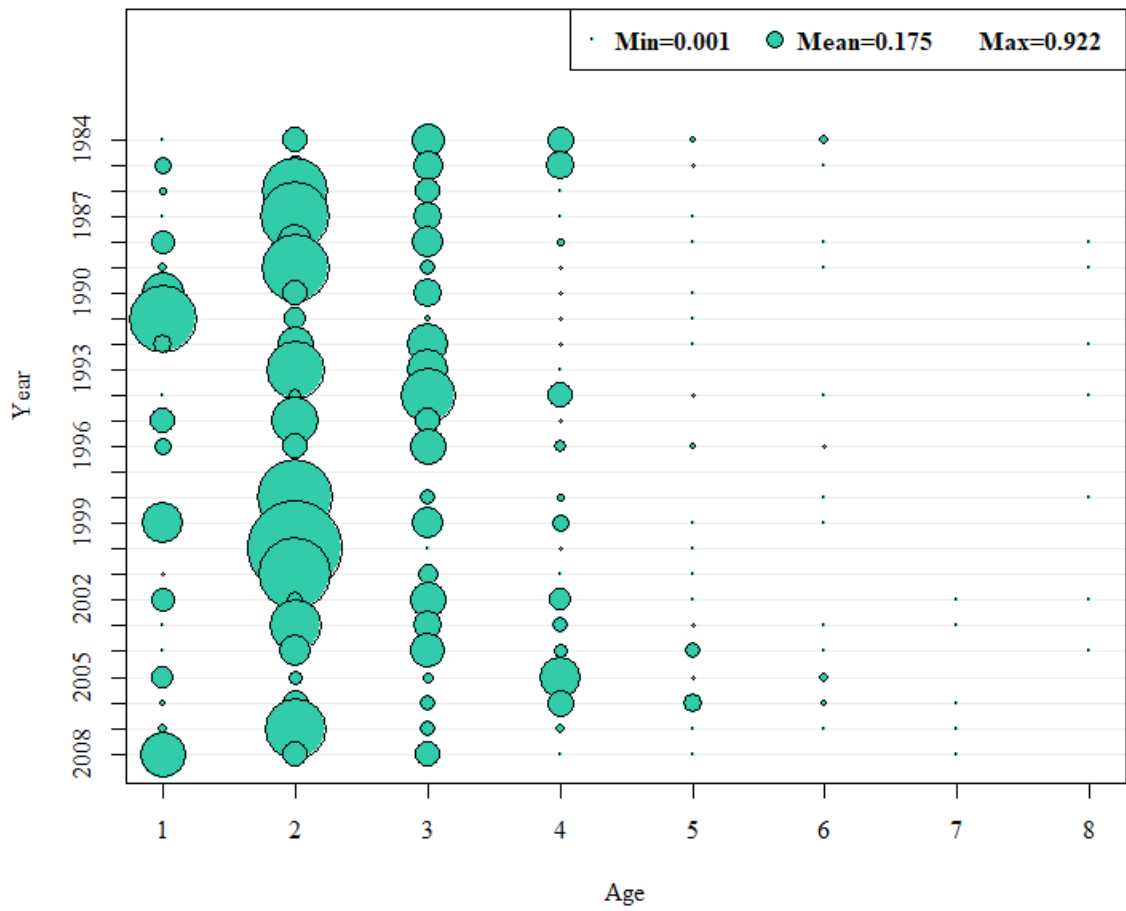


Figure 3: Black sea bass age composition (proportion-at-age) from the NEFSC spring bottom trawl survey for the Albatross IV years of 1984-2008 (a) and the H. B. Bigelow years of 2009-2022 (b).

b)

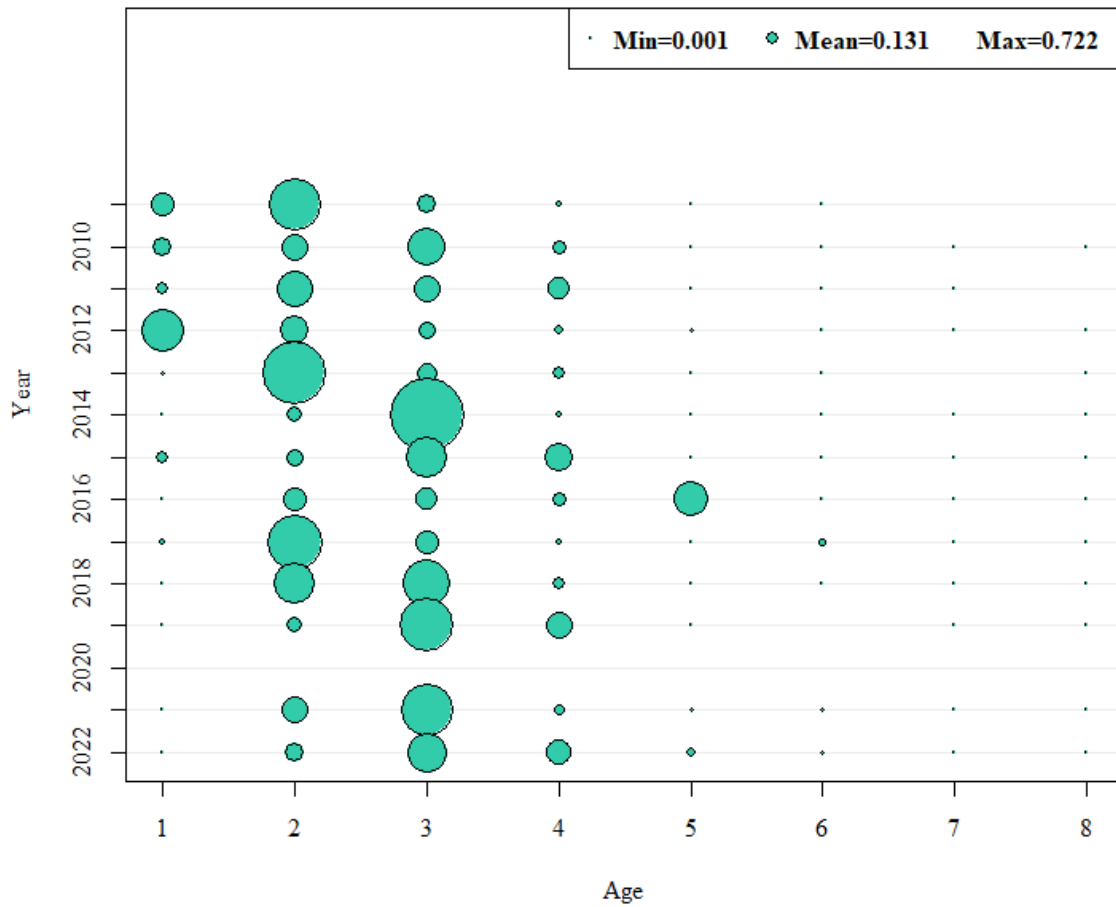


Figure 3, contd.: Black sea bass age composition (proportion-at-age) from the NEFSC spring bottom trawl survey for the Albatross IV years of 1984-2008 (a) and the H. B. Bigelow years of 2009-2022 (b).



Black Sea Bass Fishery Information Document

June 2023

This document provides a brief overview of the biology, stock condition, management system, and fishery performance for black sea bass (*Centropristis striata*) with an emphasis on 2022. Data sources include unpublished National Marine Fisheries Service (NMFS) commercial fish dealer reports, vessel trip reports (VTRs), permit data, Northeast Fisheries Observer Program data, Marine Recreational Information Program (MRIP) data,¹ and stock assessment information. All 2022 data should be considered preliminary. For more information on black sea bass management, including previous Fishery Information Documents, visit <http://www.mafmc.org/sf-s-bsb>.

Key Facts

- Black sea bass are not overfished and overfishing is not occurring, according to the most recent stock assessment. Spawning stock biomass in 2019 was estimated to be about 2.1 times the target level and fishing mortality was 15% below the threshold level.
- In 2022, about 5.30 million pounds of black sea bass were landed by commercial fishermen, the highest commercial landings in the time series going back to 1981.
- Commercial fish dealers paid an average of \$2.61 per pound of black sea bass in 2022, an 11% decrease from the 2021 average after accounting for inflation.
- Recreational fishermen harvested an estimated 8.14 million pounds of black sea bass in 2022, a 32% decrease from 2021.
- Anglers fishing from private/rental vessels accounted for 91% of recreational black sea bass harvest (in numbers of fish) in 2022.

Basic Biology

Black sea bass are distributed from the Gulf of Maine through the Gulf of Mexico. Genetic studies have identified three stocks within that region. This document focuses on the stock from the Gulf of Maine through Cape Hatteras, North Carolina.

Adult and juvenile black sea bass are mostly found on the continental shelf. Young of the year (i.e., fish less than one year old) can be found in estuaries. Adults show strong site fidelity during the summer and prefer to be near structures such as rocky reefs, coral patches, cobble and rock fields, mussel beds, and shipwrecks. Black sea bass migrate to offshore wintering areas starting in the fall. During the winter, young of the year are distributed across the shelf and adults and

¹ 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). The revised estimates of catch and landings are higher than the previous estimates for shore and private boat modes. Most recreational estimates in this document reflect revised MRIP estimates except where otherwise noted.

juveniles are found near the shelf edge. During the fall, adults and juveniles off New York and north move offshore and travel along the shelf edge to as far south as Virginia. Most return to northern inshore areas by May. Black sea bass off New Jersey to Maryland travel southeast to the shelf edge during the late fall. Black sea bass off Virginia and Maryland travel a shorter distance due east to the shelf edge, which is closer to shore than in areas to the north (Drohan et al. 2007, NEFSC 2017).

Black sea bass are protogynous hermaphrodites, meaning they are born female and some later transition to males, usually around 2-5 years of age. About 25% of 15 cm (about 6 inches) black sea bass are males, with increasing proportions of males at larger sizes until about 50 cm, when about 70-80% of black sea bass are male. Male black sea bass are either of the dominant or subordinate type. Dominant males are larger than subordinate males and develop a bright blue nuchal hump during the spawning season. Results from a simulation model highlight the importance of subordinate males in spawning success. This increases the resiliency of the population to exploitation compared to other species with a more typical protogynous life history. About half of black sea bass are sexually mature by 2 years of age and 21 cm (about 8 inches) in length. Black sea bass reach a maximum size of about 60 cm (about 24 inches) and a maximum age of about 12 years (Blaylock and Shepherd 2016, NEFSC 2017).

Black sea bass in the Mid-Atlantic spawn in nearshore continental shelf areas at depths of 20-50 meters. Spawning usually takes place between April and October. During the summer, adult black sea bass share habitats with tautog, hakes, conger eel, sea robins and other migratory fish species. Essential fish habitat for black sea bass includes pelagic waters, structured habitat, rough bottom, shellfish, sand, and shell, from the Gulf of Maine through Cape Hatteras, North Carolina. Juveniles and adults mostly feed on crustaceans, small fish, and squid. The Northeast Fisheries Science Center (NEFSC) food habits database lists spiny dogfish, Atlantic angel shark, skates, spotted hake, summer flounder, windowpane flounder, and monkfish as predators of black sea bass (Drohan et al. 2007).

Status of the Stock

The most recent stock status information for black sea bass is available from a management track stock assessment which was peer reviewed and accepted in June 2021 (NEFSC 2022a). This assessment incorporated fishery data and fishery-independent survey data through 2019. Data from 2020 were not incorporated due to significant gaps in some data sets due to the COVID-19 pandemic and the time required to consider how to best address those gaps.

A research track assessment is currently in development and is scheduled for peer review in October 2023. Stock status will be updated through a subsequent management track assessment in June 2024.

The 2021 management track assessment indicated that the black sea bass stock was not overfished and overfishing was not occurring in 2019. Spawning stock biomass in 2019 was estimated at about 2.1 times the target level. Fishing mortality in 2019 was estimated to be 15% below the threshold level that defines overfishing (Table 1, Figure 1 - Figure 3, NEFSC 2022a).

The 2011 year class (i.e., fish spawned in 2011) was estimated to be the largest in the time series and the 2015 year class was the second largest. The 2017 year class was well below the 1989-2018 average, but the 2018 year class was above average at (Figure 2). The 2018 year class is the most recent year class for which estimates are currently available (NEFSC 2022a).

The NEFSC provides “data updates” in the interim years between management track assessments. Data updates include information on fishery catches and fishery-independent survey indices through the prior year. A data update in 2022 (NEFSC 2022b) showed that relative abundance from the NEFSC spring bottom trawl survey has steadily increased since 2015. Age composition data suggested above average recruitment from the 2015, 2016, and 2019 cohorts. An updated data update will be provided in the summer of 2023.

Table 1: Black sea bass biological reference points from the 2021 management track stock assessment (NEFSC 2022a).

	Spawning stock biomass	Fishing mortality rate (F)
Target	31.84 mil lb (14,441 mt)	N/A
Threshold	15.92 mil lb (7,221 mt)	0.46
Terminal year estimate (2019)	65.53 mil lb (29,769 mt) ^a 2.1 times target level	0.39 ^a 15% below threshold level
Status	Not overfished	Overfishing not occurring

^a Adjusted for retrospective bias

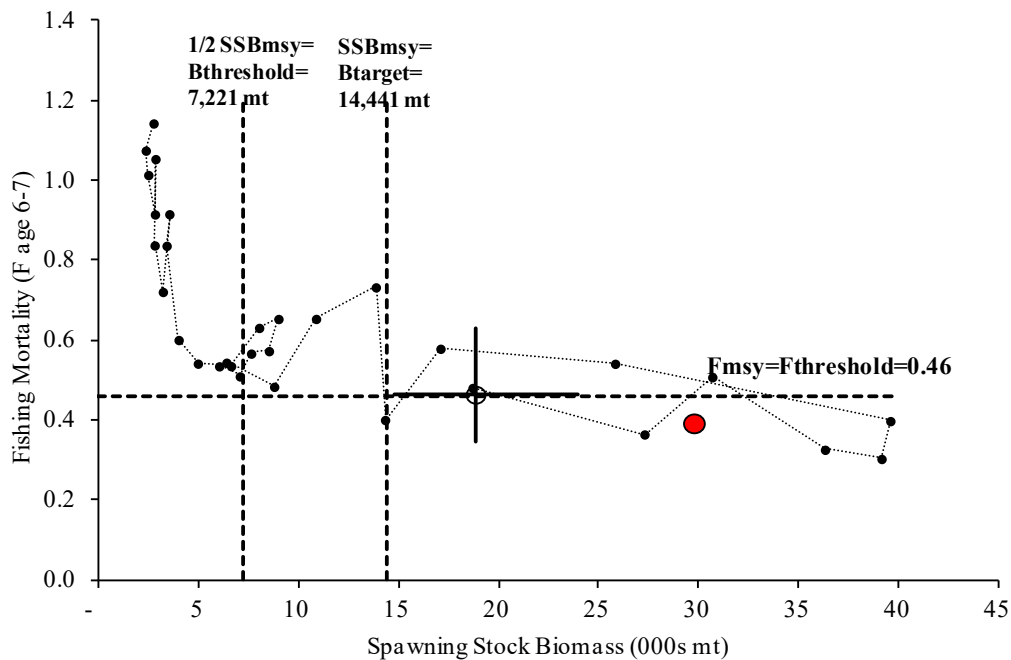


Figure 1: Estimates of black sea bass spawning stock biomass (SSB) and fully-recruited fishing mortality (F, peak at ages 6-7) relative to biological reference points. Open circle with 90% confidence intervals shows the assessment point estimates. The filled circle shows the retrospectively adjusted estimates which are used in management (NEFSC 2022a).

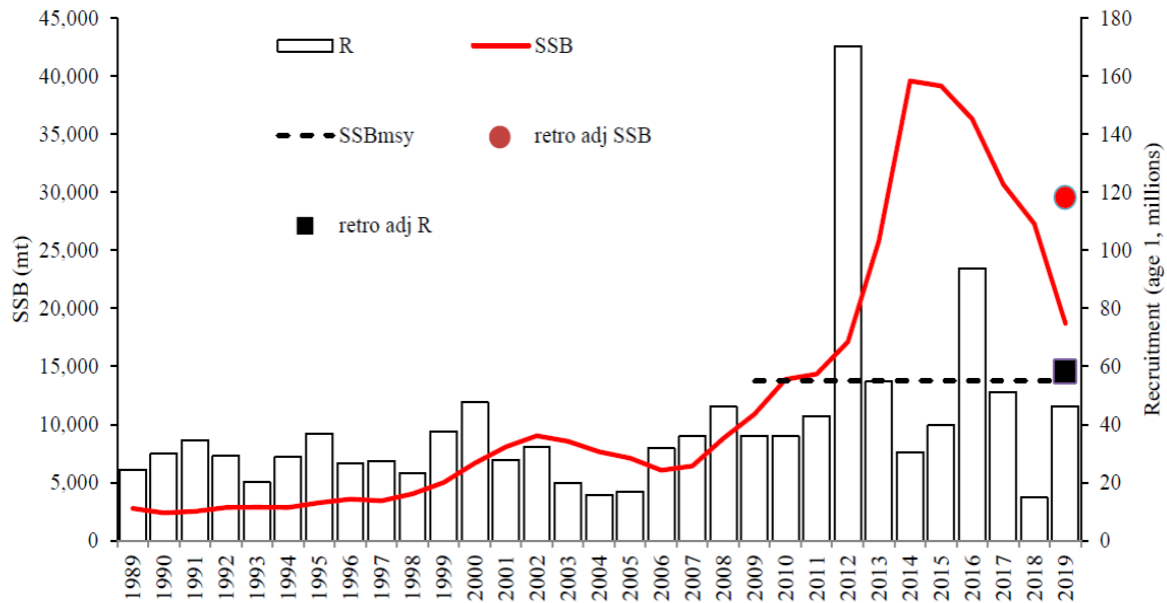


Figure 2: Black sea bass spawning stock biomass (SSB; solid line) and recruitment at age 1 (R; vertical bars), 1989-2019 (NEFSC 2022a). The horizontal dashed line is the updated SSB_{msy} proxy = SSB_{40%} = 14,441 mt. SSB and recruitment estimates for 2019 were adjusted for a retrospective pattern in the stock assessment (red circle and black square, respectively). Adjusted values are used in management.

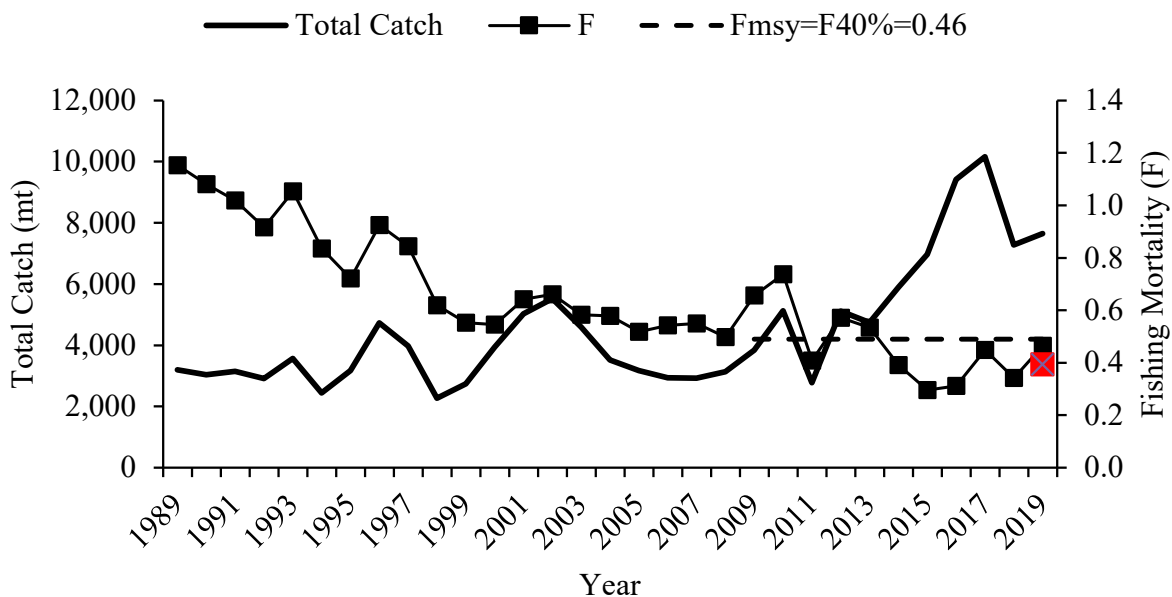


Figure 3: Total fishery catch (metric tons; mt; solid line) and fishing mortality (F, peak at age 6-7; squares) for black sea bass (NEFSC 2022a). The horizontal dashed line is the updated F_{msy} proxy = F_{40%} = 0.46. The red square is the retrospectively adjusted fishing mortality value for 2019. The adjusted value is used in management.

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission) work cooperatively to develop commercial and recreational fishery regulations for black sea bass from Maine through Cape Hatteras, North Carolina. The Council and Commission work with NMFS, which serves as the federal implementation and enforcement entity. This cooperative management system was developed because a significant portion of the catch is taken from both state waters (0-3 miles offshore) and federal waters (3-200 miles offshore). The joint management program began in 1996 with the approval of amendment 9 to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP). The original FMP and subsequent amendments and framework adjustments are available at: www.mafmc.org/fisheries/fmp/sf-s-bsb.

Commercial and recreational black sea bass fisheries are managed using catch and landings limits, minimum fish sizes, open and closed seasons, gear regulations, permit requirements, and other regulations.

The Council's Scientific and Statistical Committee (SSC) recommends annual Acceptable Biological Catch (ABC) levels for black sea bass (Table 2). The Council must either approve the ABC recommended by the SSC or a lower ABC. Through 2022, 49% of the total allowable landings (calculated by subtracting total expected dead discards from the ABC) were allocated to the commercial fishery as a commercial quota and 51% allocated to the recreational fishery as an RHL. Starting with 2023, the ABC is now allocated 45% to the commercial fishery as a commercial annual catch limit (ACL) and 55% to the recreational fishery as a recreational ACL.²

The Council and Commission also approve commercial and recreational annual catch targets (ACTs), which are set equal to or less than the respective ACLs to account for management uncertainty. To date, the black sea bass ACTs have always been set equal to the ACLs. The ABC, ACLs, and ACTs are catch limits which account for both landings and discards, while the commercial quota and recreational harvest limit (RHL) are landing limits. The commercial quota and RHL are calculated by subtracting expected discards from the respective ACTs (Table 3, Table 12).

Fishery Catch Summary

Table 2 shows the black sea bass ABCs from 2010 through 2023, as well as the overfishing limit (OFL), from which the ABC is derived when possible. The ABC is set less than or equal to the OFL to account for scientific uncertainty. As shown in Table 2, ABC overages occurred in many years; however, OFL overages have been rare. Depending on the year, the ABC overages were driven by higher than anticipated discards in one or both of the commercial and recreational sectors and/or recreational harvest exceeding the RHL (Table 3, Table 12). The Council and Commission have taken steps in recent years to better account for discards when setting catch and landings limits. Changes have also been made to the process of setting recreational management measures, as described in more detail below.

² For more information on the commercial/recreational allocation revisions, see <https://www.mafmc.org/actions/sfsbsb-allocation-amendment>.

Figure 4 shows commercial and recreational black sea bass landings and dead discards from 1993 through 2022 (note that discards are only shown through 2021). Total dead catch (landings and dead discards) have been generally increasing over the past decade, with peaks in 2016, 2017, and 2021 largely driven by recreational landings.

Table 2: Total dead catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC, 2014-2023. All values are in millions of pounds. The recreational contribution to total dead catch is based on data in the “old” MRIP units through 2019 and the revised MRIP data starting in 2020. Catch limits did not account for the revised MRIP data until 2020. Dead discard estimates for 2022 are not currently available.

Year	Total dead catch^a	OFL^b	OFL overage/underage	ABC^b	ABC overage/underage
2013	5.99	NA	NA	5.50	+9%
2014	7.92	NA	NA	5.50	+44%
2015	7.92	NA	NA	5.50	+44%
2016	10.66	NA	NA	6.67	+60%
2017	11.70	12.05	-3%	10.47	+12%
2018	9.97	10.29	-3%	8.94	+12%
2019	9.77	10.29	-5%	8.94	+9%
2020	17.88	19.39	-8%	15.07	+19%
2021	21.82	17.68	+23%	17.45	+25%
2022	--	19.56	--	18.86	--
2023	--	17.01	--	16.66	--

^a See Table 3 and Table 12 for the commercial and recreational data contributing to the total catch estimates.

^bAn OFL was not used and the ABC was set based on a constant catch approach during 2010-2015 due to the lack of a peer reviewed and accepted stock assessment. The 2016 ABC was set based on a data limited methodology. Starting with 2017, the ABC has been set based on a peer reviewed and approved stock assessment.

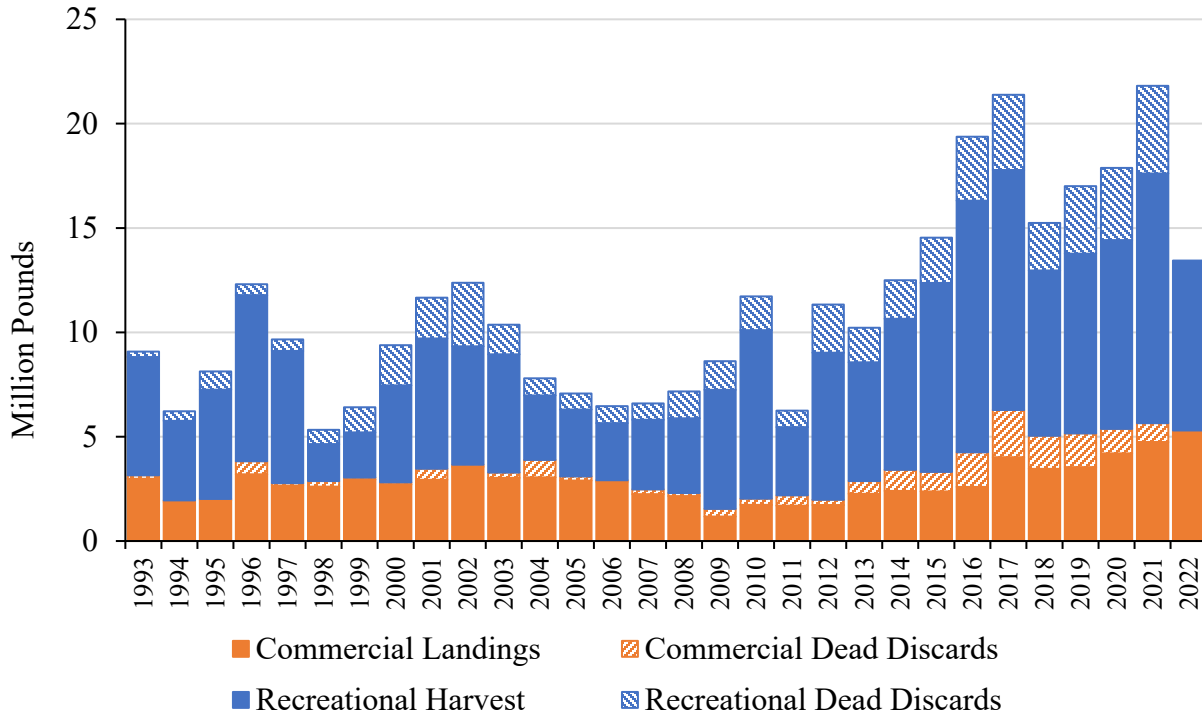


Figure 4: Commercial and recreational black sea bass landings and dead discards in millions of pounds, Maine – Cape Hatteras, North Carolina, 1993-2022, based on federal dealer data for commercial landings, MRIP data for recreational landings, NEFSC data for discards through 2019 (NEFSC 2022a), and GARFO discard estimates for 2020-2021. *Discard estimates for 2022 are not shown in this figure as they are not currently available.*

Commercial Fishery

In 2022, about 5.30 million pounds of black sea bass were landed in the commercial fishery, the highest commercial landings in the time series of available data from 1981 through 2022. The 2022 commercial quota of 6.47 million pounds was higher than any previous quota (Table 3). Commercial black sea bass landings were lowest in 2009, when 1.18 million pounds were landed and the lowest quota in the time series was implemented (1.09 million pounds).

Commercial quota overages have been rare; however, ACL overages occurred each year during 2013-2019 based on higher than expected discards. The method for calculating projected dead discards was revised starting with the 2021 specifications in an attempt to address this issue (Table 3).

Black sea bass are a valuable commercial species. Total ex-vessel value was \$13.84 million in 2022. Landings and average price per pound (adjusted to 2021 dollars) were generally stable from 2010 through 2016. Landings increased in 2017 with an increase in the quota. On an annual coastwide level, the average price per pound tended to decrease with increases in landings since 2016 (Figure 5). Prices are impacted by many factors in addition to landings. The relationship between landings and price varies at the regional, state, and sometimes port level based on market

demand, state-specific regulations (e.g., seasonal openings), or individual trawl trips with high landings, all of which can be inter-related.

A total of 159 federally-permitted dealers from Maine through North Carolina purchased black sea bass in 2022. More dealers bought black sea bass in New York than in any other state (Table 4).

According to federal VTR data, statistical area 615, off southern New Jersey, was responsible for the largest percentage (22%) of commercial black sea bass catch (landings and live and dead discards, as reported by captains) in 2022. Statistical area 616, which includes important fishing areas near Hudson Canyon, accounted for the second highest proportion of catch (21%), followed by statistical area 537, south of Massachusetts and Rhode Island (9%); statistical area 613, south of Long Island (8%); statistical area 621, off southern New Jersey, Delaware, and Maryland (6%); and statistical area 612, off northern New Jersey and Western Long Island (6%; Table 5, Figure 6). Statistical area 613 had the highest number of trips which reported black sea bass catch on federal VTRs in 2022 (1,702 trips), followed by statistical area 537 (1,333 trips; Table 5).

According to dealer data, in 2022, most commercial black sea bass landings from state and federally-permitted vessels occurred in New Jersey (23%), followed by Massachusetts (17%), Rhode Island (15%), Virginia (12%), and New York (12%). All other states in the management unit each accounted for less than 10% of landings in 2022. The percentage of landings by state is generally driven by the state commercial quota allocations. States set measures to achieve their state-specific commercial quotas. These allocations were first implemented in 2003. The Council and Commission recently revised these allocations such that they now are based partially on the original state allocations and partially on recent biomass distribution information. The revised allocations were first implemented in 2022.³

At least 100,000 pounds of black sea bass were landed in 11 ports in 6 states from Maine through North Carolina in 2022. These 11 ports collectively accounted for over 60% of all commercial black sea bass landings in 2022 (Table 6).

Since 1997, a moratorium permit has been required to fish commercially for black sea bass in federal waters. In 2022, 663 of these permits were issued.

A minimum commercial black sea bass size limit of 11 inches total length has been in place in federal waters since 2002. There is no federal waters black sea bass possession limit; however, many states have set possession limits for state waters.

About 66% of commercial black sea bass landings reported on federal VTRs in 2022 were caught with bottom otter trawl gear, 29% with pots/traps, and 5% with hand lines. Other gear types each accounted for less than 1% of total commercial landings reported on VTRs in 2022. It is important to note that federal VTR data do not account for landings of black sea bass by vessels that are only permitted to fish in state waters. Some gear types (e.g., handlines) are more prevalent in state waters than in federal waters.

Any federally-permitted vessel which uses otter trawl gear and catches more than 500 pounds of black sea bass from January through March, or more than 100 pounds from April through December, must use nets with a minimum mesh size of 4.5-inch diamond mesh applied throughout

³ More information on the revised black sea bass commercial state allocations is available at <https://www.mafmc.org/actions/bsb-commercial-allocation>.

the codend for at least 75 continuous meshes forward of the end of the net. Pots and traps used to commercially harvest black sea bass must have two escape vents with degradable hinges in the parlor. The escape vents must measure 1.375 inches by 5.75 inches if rectangular, 2 inches by 2 inches if square, or have a diameter of 2.5 inches if circular.

The most commonly caught non-target species in the commercial black sea bass fishery were identified based on raw data from Northeast Fisheries Observer Program observed trips from 2017-2022 where black sea bass made up at least 75% of the landings by weight. Using this definition of a directed trip, the most common non-target species in the black sea bass fishery include spiny dogfish, scup, sea robins (northern, striped, and unclassified), skates (little, winter, and unclassified), and summer flounder (Table 7).

Table 3: Black sea bass commercial landings and dead catch compared to the commercial quota and commercial ACL, 2014-2023. Discard estimates for 2022 are not currently available. All values are in millions of pounds.

Year	Com. landings ^a	Com. quota ^b	Quota overage/ underage	Com. dead discards ^c	Com. dead catch	ACL	ACL overage/ underage
2014	2.40	2.17	+11%	1.01	3.41	2.6	+31%
2015	2.38	2.21	+8%	0.93	3.31	2.6	+27%
2016	2.59	2.71	-4%	1.67	4.26	3.15	+35%
2017	4.01	4.12	-3%	2.26	6.27	5.09	+23%
2018	3.46	3.52	-2%	1.59	5.05	4.35	+16%
2019	3.55	3.52	1%	2.26	5.81	4.35	34%
2020	4.20	5.58	-25%	1.17	5.37	6.98	-23%
2021	4.75	6.09	-22%	0.9	5.65	9.52	-41%
2022	5.30	6.47	-18%	--	--	10.10	--
2023	--	4.80	--	--	--	7.50	--

^a NMFS commercial dealer data.

^b The 2014 commercial quota reflects a 3% deduction for Research Set Aside.

^c Estimates through 2019 are based on NEFSC data as provided in 2021 management track assessment (NEFSC 2022a). Estimates for 2020 and 2021 were provided by GARFO and may be updated. Estimates for 2022 are not currently available.

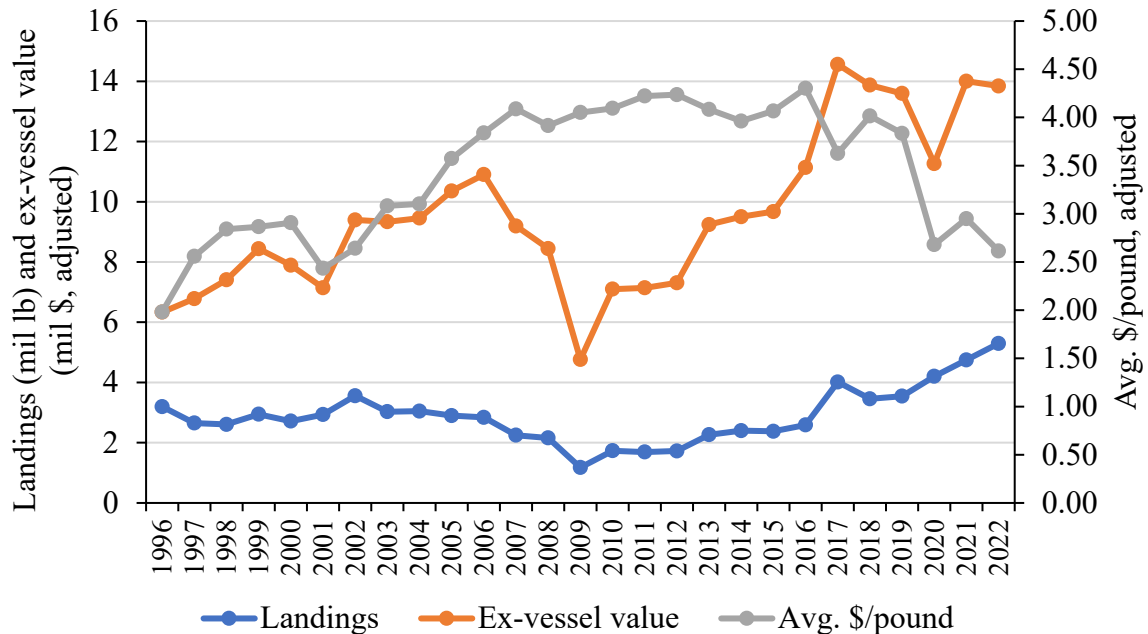


Figure 5: Landings, ex-vessel value, and average price for black sea bass, ME-NC, 1996-2022. Ex-vessel value and price are inflation-adjusted to 2022 dollars using the Gross Domestic Product Price Deflator.

Table 4: Number of dealers, by state, reporting purchases of black sea bass in 2022.

State	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of dealers	0	0	36	31	14	50	27	4	7	10	17

Table 5: Statistical areas that accounted for at least 5% of the total commercial black sea bass catch (landings and dead discards) in 2022 based on federal VTRs, with associated number of trips. Federal VTR data do not include landings by vessels only permitted to fish in state waters.

Statistical Area	Percent of 2022 Commercial Black Sea Bass Catch	Number of Trips
615	22%	286
616	21%	463
537	9%	1,333
613	8%	1,702
621	6%	293
612	6%	512

2022 Commercial Black Sea Bass Catch - VTRs

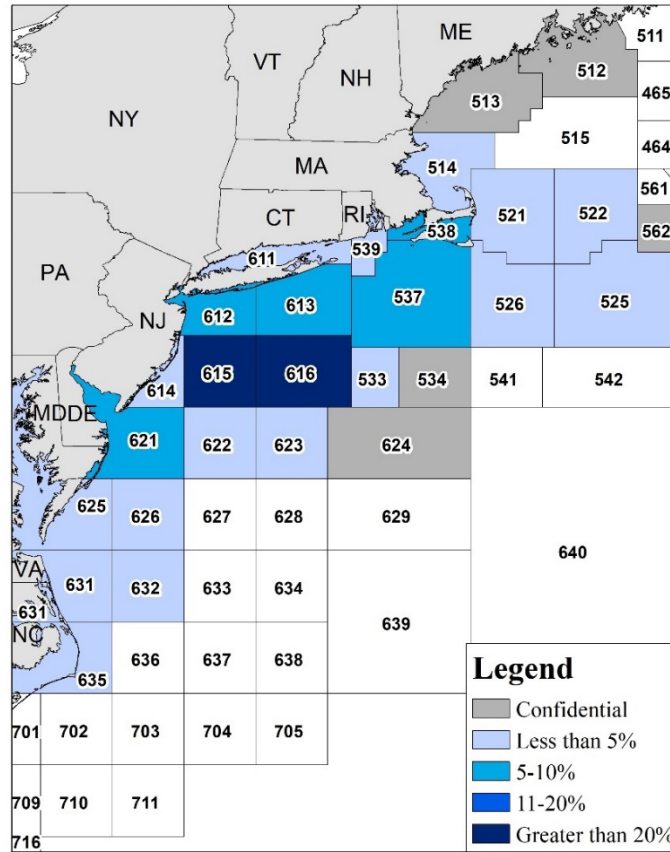


Figure 6: Proportion of black sea bass catch (landings and dead discards) by statistical area in 2022 based on federal VTR data. Confidential areas are associated with fewer than three vessels and/or dealers. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

Table 6: Ports reporting at least 100,000 pounds of black sea bass landings in 2022, associated number of vessels, and percentage of total commercial landings. C = confidential.

Port name	Pounds of black sea bass landed	% of total commercial black sea bass landed	Number of vessels landing black sea bass
POINT JUDITH, RI	652,377	12%	137
POINT PLEASANT, NJ	640,632	12%	41
OCEAN CITY, MD	386,391	7%	16
MONTAUK, NY	365,483	7%	95
NEW BEDFORD, MA	339,715	6%	63
CAPE MAY, NJ	275,524	5%	26
HAMPTON, VA	202,429	4%	20
SEA ISLE CITY, NJ	175,609	3%	10
NORFOLK, VA	122,687	2%	5
NEWPORT NEWS, VA	114,720	2%	14
VIRGINIA BEACH, VA	C	C	C

Table 7: Percent of non-target species caught in observed trawls where black sea bass made up at least 75% of the observed landings, 2017-2022. Only those non-target species comprising at least 2% of the aggregate non-target catch are listed.

Species	% of total catch on black sea bass observed directed trips, 2017-2022 ^a
DOGFISH, SPINY	12%
SCUP	9%
SEA ROBIN, NORTHERN	6%
SEA ROBIN, STRIPED	3%
SEA ROBIN, NK	3%
SKATE, LITTLE/WINTER, NK	2%
FLOUNDER, SUMMER (FLUKE)	2%
SKATE, LITTLE	2%

^a Percentages are aggregate totals over 2017-2022 and do not reflect the percentages of non-target species caught on individual trips. This analysis describes only observed trips and has not been expanded to the fishery as a whole.

Recreational Fishery

State and federal waters recreational management measures for black sea bass remained virtually unchanged from 2018-2021. In 2022, state measures were modified with the goal of achieving a 20.7% reduction in harvest compared to the 2018-2021 average (Table 8). A new approach for setting recreational management measures, referred to as the Percent Change Approach, was used to set black sea bass measures in 2023.⁴ This approach required a 10% reduction in expected harvest in 2023. State waters recreational measures for 2023 are shown in Table 9. The Council and Commission agreed to use the federal conservation equivalency process to waive federal waters recreational measures for black sea bass for the first time in 2022 (Table 10). This approach was continued for 2023.

According to the most recent MRIP data, between 1981 and 2021, recreational catch (landings and live and dead discards) of black sea bass from Maine through Cape Hatteras, NC was lowest in 1984 at 4.73 million fish and was highest in 2021 at 42.67 million fish. Recreational harvest in weight was highest in 2016 at 12.05 million pounds;⁵ however, harvest in numbers of fish was highest in 1986 at 19.28 million fish. Recreational harvest in weight was lowest in 1981 at 1.53 million pounds, while harvest in numbers of fish was lowest in 1998 at 1.56 million fish. Recent time series of recreational harvest and discards are shown in Figure 4 and Table 11.

Recreational harvest in 2022 was estimated at 8.14 million pounds, about 21% above the 2022 RHL of 6.74 million pounds. RHL overages have been common for black sea bass in recent years (Table 12).

⁴ More information on the Percent Change Approach is available at <https://www.mafmc.org/newsfeed/2022/mafmc-amp-asmfc-take-first-step-toward-recreational-management-reform-for-bluefish-summer-flounder-scup-and-black-sea-bass>

⁵ The coastwide 2016 and 2017 MRIP estimates for black sea bass are viewed as outliers by the Monitoring and Technical Committees and the Scientific and Statistical Committee due to the influence of very high estimates in individual states and waves (i.e., New York 2016 wave 6 for all modes and New Jersey 2017 wave 3 for the private/rental mode). Steps have been taken to address uncertainty in these specific estimates in management.

In 2022, 54% of black sea bass harvested by recreational fishermen from Maine through Cape Hatteras, North Carolina (in numbers of fish) were caught in state waters and 46% in federal waters (Table 13). Most of the recreational harvest in numbers of fish in 2022 was landed in New Jersey (32%), followed by New York (28%; Table 14).

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2022, 962 vessels held a federal party/charter black sea bass permit.

About 91% of the recreational black sea bass harvest in numbers of fish in 2022 came from anglers fishing on private or rental boats, about 9% from anglers aboard party or charter boats, and 2% from anglers fishing from shore (Table 15).

The top non-target species in the recreational fishery were identified by a species guild approach that identifies species with the strongest associations on recreational trips from 2017-2021 (2021 MRIP data used here were preliminary and excluded wave 6). Scup, sea robins, summer flounder, bluefish, and tautog were highly correlated with black sea bass recreational catch (J. Brust, personal communication March 2022).

Table 8: State waters black sea bass recreational measures in 2022.

State	Min. Size	Bag Limit	Open Season
Maine	13"	10 fish	May 19-Sept 21; Oct 18-Dec 31
New Hampshire	13"	10 fish	Jan-Dec 31
Massachusetts	16"	4 fish	May 21-Sept 4
Rhode Island private & shore	16"	2 fish	May 22-Aug 31
		3 fish	Sept 1-Dec31
Rhode Island for-hire		2 fish	June 18-Aug 31
6 fish		Sept 1-Dec 31	
Connecticut private & shore	16"	5 fish	May 19-Dec 1
CT authorized for-hire monitoring program vessels		5 fish	May 19-Aug 31
		7 fish	Sept 1-Dec 31
New York	16"	3 fish	June 23-Aug 31
		6 fish	Sept 1-Dec 31
New Jersey	13"	10 fish	May 17-Jun 19
		2 fish	July 1-Aug 31
		10 fish	Oct 7-Oct 26
		15 fish	Nov 1-Dec 31
Delaware	13"	15 fish	May 15-Dec 11
Maryland			
Virginia			
North Carolina North of Cape Hatteras (35° 15'N)			

Table 9: State waters black sea bass recreational measures in 2023.

STATE	Size Limit	Possession Limit	Open Season
Maine	13"	10 fish	May 19-September 21; October 18-December 31
New Hampshire	16.5"	4 fish	January-December 31
Massachusetts	16.5"	4 fish	May 20-September 7
Rhode Island private & shore	16.5"	2 fish	May 22-August 26
		3 fish	August 27-December 31
Rhode Island for-hire	16"	2 fish	June 18-August 31
		6 fish	September 1-December 31
Connecticut private & shore	16"	5 fish	May 19-June 23; July 8-December 1
CT authorized for-hire monitoring program vessels		5 fish	May 19-August 31
		7 fish	September 1-December 31
New York	16.5"	3 fish	June 23-August 31
		6 fish	September 1-December 31
New Jersey	12.5"	10 fish	May 17-June 19
		1 fish	July 1-August 31
		10 fish	October 1-October 31
		15 fish	November 1-December 31
Delaware	13"	15	May 15-September 30; October 10-December 31
Maryland	13"	15	May 15-September 30; October 10-December 31
Virginia	13"	15	May 15-July 6; August 9-December 31
North Carolina North of Cape Hatteras (35° 15'N)	13"	15	May 15-September 30; October 10-December 31

Table 10: Federal black sea bass recreational measures, Maine - Cape Hatteras, NC, 2007 - 2023.

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
2022-2023	Federal waters measures waived in favor of state measures		

Table 11: Estimated recreational black sea bass catch (harvest and live and dead discards) and harvest from Maine through Cape Hatteras, North Carolina, 2013-2022.

Year	Catch (millions of fish)	Harvest (millions of fish)	Harvest (millions of pounds)	% of catch retained
2013	25.78	3.02	5.69	12%
2014	23.91	3.97	7.24	17%
2015	24.11	4.94	9.06	20%
2016	35.81	5.84	12.05	16%
2017	41.19	5.70	11.50	14%
2018	24.99	3.99	7.92	16%
2019	32.32	4.38	8.61	14%
2020	34.11	4.23	9.05	12%
2021	42.67	6.44	11.97	15%
2022	41.13	4.57	8.14	11%

Table 12: Black sea bass recreational landings, dead discards, and dead catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Values are provided in the “old” MRIP units for 2014-2019 and the “new” MRIP units for 2020-2023 as 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. Dead discard estimates for 2022 are not currently available. All values are in millions of pounds.

Year	Version of MRIP data	Rec. harvest ^a	RHL ^b	RHL over/under	Rec. dead disc. ^c	Rec. dead catch	ACL	ACL over/under
2014	Old MRIP (pre-revision)	3.67	2.26	+62%	0.84	4.51	2.9	+56%
2015		3.79	2.33	+63%	0.82	4.61	2.9	+59%
2016		5.19	2.82	+84%	1.21	6.40	3.52	+82%
2017		4.16	4.29	-3%	1.27	5.43	5.38	+1%
2018		3.82	3.66	+4%	1.1	4.92	4.59	+7%
2019		3.46	3.66	-5%	0.5	3.96	4.59	-14%
2020 ^d	New MRIP (post-revision)	9.05	5.81	+56%	3.46	12.51	8.09	+55%
2021		11.97	6.34	+89%	4.20	16.17	7.93	+104%
2022		8.14	6.74	+21%	--	--	8.76	--
2023		--	6.57	--	--	--	9.16	--

^a Based on MRIP data through 2017. Values for 2018 and 2019 were provided by GARFO.

^b The 2014 RHL reflects a 3% deduction for Research Set Aside.

^c Estimates for 2014-2017 are from data update provided by the NEFSC in 2018 (most recent data from NEFSC in “old” MRIP units; NEFSC 2018). Estimates for 2018-2019 are from the 2021 management track assessment (NEFSC 2022a). Estimates for 2020 and 2021 were provided by GARFO and may be updated. Estimates for 2022 are not currently available.

^d Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to COVID-19. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019. For black sea bass, the 2020 harvest estimate for Maine-Virginia relied on approximately 17% imputed data. For more information on imputation methods see: <https://www.mafmc.org/s/1-2020-Marine-Recreational-Catch-Estimates-QA-52121.pdf>.]

Table 13: Estimated percentage of black sea bass recreational harvest (in numbers of fish) in state and federal waters, from Maine through Cape Hatteras, North Carolina, 2013-2022.

Year	State waters	Federal waters
2013	67%	33%
2014	68%	32%
2015	69%	31%
2016	59%	41%
2017	40%	60%
2018	61%	39%
2019	62%	38%
2020	56%	44%
2021	52%	48%
2022	54%	46%
2013-2022 avg	59%	41%

Table 14: State contribution to total recreational harvest of black sea bass (in number of fish), Maine through Cape Hatteras, North Carolina, 2020 – 2022.

State	2020	2021	2022	2020-2022 average
Maine	0%	0%	0%	0%
New Hampshire	<1%	<1%	<1%	0%
Massachusetts	14%	19%	8%	14%
Rhode Island	15%	8%	6%	9%
Connecticut	10%	13%	8%	11%
New York	30%	14%	28%	23%
New Jersey	19%	30%	32%	28%
Delaware	3%	6%	4%	5%
Maryland	2%	3%	3%	3%
Virginia	6%	7%	8%	7%
North Carolina	1%	<1%	1%	1%

Table 15: Percent of total recreational black sea bass harvest (in numbers of fish) by recreational fishing mode, Maine through North Carolina, 2013-2022. Note that some percentages do not add to 100% due to rounding.

Year	Shore	Party/charter	Private/rental	Total number of fish (millions)
2013	2%	9%	89%	3.10
2014	3%	18%	79%	4.31
2015	<1%	20%	79%	5.26
2016	4%	8%	88%	6.03
2017	1%	9%	90%	6.00
2018	2%	12%	86%	4.07
2019	3%	17%	79%	4.52
2020	2%	11%	87%	4.32
2021	4%	12%	84%	6.48
2022	1%	9%	91%	4.68
2013-2022 avg	2%	13%	85%	4.88

^a Party and charter fishing was restricted in all states for part of 2020 due to the COVID-19 pandemic.

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MEMORANDUM

Date: July 27, 2023
To: Council and Policy Board
From: Julia Beaty, Council Staff
Subject: Recreational Harvest Control Rule Framework/Addenda 2.0

On Wednesday, August 9, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's Interstate Fishery Management Program Policy Board (Policy Board) will review progress and discuss next steps for the Recreational Harvest Control Rule Framework/Addenda 2.0. During this meeting, the Council and Policy Board will: 1) review summaries of two recent Fishery Management Action Team/Plan Development Team (FMAT/PDT) meetings, 2) consider changing the name of this action to the Recreational Measures Setting Process Framework/Addenda, as recommended by the FMAT/PDT, 3) discuss the role of the Council's Scientific and Statistical Committee, 4) consider use of the Summer Flounder Management Strategy Evaluation (MSE) model in development of this action,¹ 5) discuss the role of the new Council and Commissioner work group and appoint Council members to this group.

The following documents are provided for the Council and Policy Board's consideration of this topic.

- 1) Action Plan
- 2) Summary of June 12, 2023 FMAT/PDT meeting
- 3) Summary of July 11, 2023 FMAT/PDT meeting

¹ Additional information on the Summer Flounder Management Strategy Evaluation can be found on the June 2022 Council meeting page (<https://www.mafmc.org/briefing/june-2022>).



Summer Flounder, Scup, Black Sea Bass, and Bluefish Recreational Harvest Control Rule 2.0 Framework/Addenda

Draft Action Plan

5/24/2023

<https://www.mafmc.org/actions/hcr-framework-addenda>

Framework/Addenda Goal: This management action is being developed by the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission). This is a follow-on action to the [Recreational Harvest Control Rule Framework/Addenda](#), which implemented the Percent Change Approach for setting recreational management measures. In adopting the Percent Change Approach, the Council and the Commission’s Interstate Fishery Management Program Policy Board (Policy Board) agreed it should sunset by the end of 2025 with the goal of considering an improved measures setting process, as developed through this management action, starting with 2026 measures.

Alternatives to be Considered: In June 2022, the Council and Policy Board passed the following motion when taking final action on the Recreational Harvest Control Rule Framework/Addenda: “Move to further develop Alt. B (Pct Change Approach), Alt. D (Biological Reference Point Approach) and Alt. E (Biomass Based Matrix Approach) for implementation no later than the beginning of the 2026 fishing year. Further development should consider, at minimum, F-based approaches for Alt. B and development of measures using modeling or other approaches for Alts. D and E. Further evaluate the issue of “borrowing” as raised by the SSC for alt B, D, and E.”¹ These alternatives are briefly described below and are described in detail in the [reference guide](#) and [final framework document](#) for the previous action. The Council and Policy Board may also identify other alternatives to address the objectives of the action.

- **Percent Change Approach** – This approach was implemented starting with the 2023 recreational management measures for summer flounder, scup, and black sea bass. It will also be used for bluefish once that stock is no longer under a rebuilding plan. Under the Percent Change Approach, a determination is made to either liberalize, restrict, or leave measures unchanged based on two factors: 1) Comparison of a confidence interval around an estimate of expected harvest under status quo measures to the average recreational harvest limit (RHL) for the upcoming two years and 2) Biomass compared to the target level, as defined by the most recent stock assessment. These two factors are used to define a target harvest level for setting management measures. The target is defined as a percentage difference from expected harvest under status quo measures.
- **Biological Reference Point Approach and Biological Based Matrix Approach** - These alternatives use a combination of indicators to place the stock in one of multiple potential management measure “bins.” The indicators vary by alternative and include expected harvest under status quo measures, biomass compared to the target level, fishing mortality, recruitment, and/or trends in biomass. Bins associated with poor indicators would have more restrictive management measures and bins with positive indicators would have more liberal measures.

¹ The report from the SSC review is available at <https://www.mafmc.org/ssc-meetings/2022/may10-11>.

Measures would be assigned to all bins the first time the approach is used through the specifications process.

- **Target metric for setting measures** – The previous framework/addenda considered if recreational measures in state and federal waters should collectively aim to achieve a target level of harvest (e.g., based on the RHL), recreational dead catch (e.g., based on the recreational annual catch limit), or fishing mortality.
- **Other alternatives** – This new management action may consider other alternatives, as appropriate. For example, this could include potential revisions to the accountability measures, considerations related to conservation equivalency, and other topics.

Fishery Management Action Team (FMAT) / Plan Development Team (PDT)

An FMAT/PDT has been formed to assist with development and analysis of potential alternatives. FMAT/PDT members are listed in the table below. Other Council, Commission, and NOAA Fisheries staff, as well as other experts, will be consulted as needed.

Name	Agency	Role/Expertise
Tracey Bauer	Atlantic States Marine Fisheries Commission	FMAT/PDT Co-Chair
Julia Beaty	Mid-Atlantic Fishery Management Council	FMAT/PDT Co-Chair
Chelsea Tuohy	Atlantic States Marine Fisheries Commission	FMAT/PDT Co-Chair
Mike Celestino	New Jersey Department of Environmental Protection	Technical analysis and state management
Alexa Galvan	Virginia Marine Resources Commission	Technical analysis and state management
Mark Grant	NMFS Greater Atlantic Regional Fisheries Office	Fisheries policy and legal requirements
Marianne Randall	NMFS Greater Atlantic Regional Fisheries Office	National Environmental Policy Act requirements
Scott Steinback	NOAA Fisheries Northeast Fisheries Science Center	Recreational fisheries economist
Rachel Sysak	New York Department of Environmental Conservation	Technical analysis and state management
Corinne Truesdale	Rhode Island Department of Fish and Wildlife	Technical analysis and state management
Sam Truesdell	Massachusetts Department of Marine Fisheries	Technical analysis and state management
Sara Turner	NMFS Greater Atlantic Regional Fisheries Office	Scientific and technical analysis of federal fisheries management

Commissioner/Council Member Work Group

During their meeting on May 3, 2023, the Policy Board established a small group of Commissioners to act as a liaison between the PDT/FMAT and the Policy Board. The purpose of this group is to provide clarification of Policy Board direction and/or feedback to the PDT/FMAT. This group will periodically meet with the PDT/FMAT. Appointed Commissioners are listed below. The Council will discuss appointing Council members during their August 2023 meeting.

Name	Council Member or Commissioner
Jason McNamee	Commissioner
Nichola Meserve	Commissioner
Adam Nowalsky	Both
TBD	Council member
TBD	Council member

Draft Timeline – *Subject to change*

May 2023	<ul style="list-style-type: none"> • Fishery Management Action Team (FMAT)/Plan Development Team (PDT) formed. • May 11 Monitoring Committee (MC)/Technical Committee (TC) meeting to discuss process used to set 2023 measures and potential future improvements.
Summer 2023	<ul style="list-style-type: none"> • FMAT/PDT meeting(s) to review previously considered alternatives, lessons learned from first application of Percent Change Approach and use of Recreational Demand Model for setting 2023 measures, and initial discussions of path forward, including potential role of the Scientific and Statistical Committee (SSC). • August 8, 9, or 10 Council and Policy Board meeting to review progress and discuss next steps, including membership and role of Council/Commissioner work group and potential role for the SSC.
Fall 2023	<ul style="list-style-type: none"> • FMAT/PDT and Council/Commissioner work group meetings to continue development of alternatives. • AP meeting to review progress and provide input (potentially combined with AP meeting for 2024 recreational measures).
December 2023	<ul style="list-style-type: none"> • Council and Policy Board meeting to review progress and discuss next steps
Early 2024 - Summer 2024	<ul style="list-style-type: none"> • FMAT/PDT and Council/Commissioner work group meetings to continue development of alternatives and develop draft document for public hearings.
August 2024	<ul style="list-style-type: none"> • Council and Policy Board meeting to approve final range of alternatives and approve draft document for public hearings through Commission process
Fall 2024	<ul style="list-style-type: none"> • Public hearings
Late 2024/Early 2025	<ul style="list-style-type: none"> • FMAT/PDT and AP meetings to provide input to Council and Policy Board prior to final action.

April 2025	<ul style="list-style-type: none"> • Council and Policy Board meeting for final action.
Spring-December 2025	<ul style="list-style-type: none"> • Development, review, and revisions of framework/addenda documents. • Federal rulemaking. • MC/TC use new process to set 2026 recreational measures.
Late 2025 or early 2026	<ul style="list-style-type: none"> • Effective date of implemented changes.



**Summer Flounder, Scup, Black Sea Bass, and Bluefish
Harvest Control Rule 2.0 Framework/Addenda
Fishery Management Action Team (FMAT)/Plan Development Team (PDT)
Meeting #1 Summary
June 12, 2023**

FMAT/PDT Attendees: Tracey Bauer (ASMFC), Julia Beaty (MAFMC), Chelsea Tuohy (ASMFC), Mike Celestino (NJ DEP), Alexa Galvan (VMRC), Mark Grant (GARFO), Marianne Randall (GARFO), Scott Steinback (NEFSC), Rachel Sysak (NY DEC), Corinne Truesdale (RI DEM), Sam Truesdell (MA DMF), Sara Turner (GARFO)

Other Attendees: Alan Bianchi (NC DMF), Kiley Dancy (MAFMC), Greg DiDomenico (Lund's Fisheries/Council AP member), Hannah Hart (MAFMC), Raymond Kane (Commissioner), Adam Nowalsky (Commissioner and Council member), Will Poston (American Saltwater Guides Association)

Overview

The FMAT/PDT met via webinar on Monday, June 12, 2023 to review previously considered management alternatives and items for further consideration during development of this new management action. In addition, the FMAT/PDT discussed next steps, potential analysis needs, possible roles for the Scientific and Statistic Committee (SSC), and a new name for the management action.

Briefing materials considered by the FMAT/PDT are available at: <https://www.mafmc.org/council-events/2023/june-12/sfsbsbb-hcrule2-fmat-pdt>

General Discussion

This was the first meeting of this FMAT/PDT, and thus began by providing general introductory information and background. Staff reviewed the role of the FMAT/PDT, the Commissioner/Council member work group, and the goals and objectives of the previous Harvest Control Rule (HCR) Framework/Addenda. In addition, staff provided an overview of alternatives from the previous framework/addenda and additional items the FMAT/PDT has been tasked with considering when developing this new management action, as specified in the motion by the Mid-Atlantic Fishery Management Council (Council) and Atlantic States Marine Fisheries Commission (Commission) Policy Board at their June 2022 meeting. Lastly, staff provided a brief overview of next steps, highlighting a Council/Policy Board meeting in August 2023 when they will discuss the goals, scope, and next steps for this management action. Before moving to the discussion topics, the FMAT/PDT asked several questions on the information that was presented.

- One FMAT/PDT member asked if everything considered by the Council/Policy Board in the previous HCR Framework/Addenda is on the table again to be reconsidered for this new management action.
 - The group discussed that the scope of this new management action is not entirely clear yet, as additional guidance from the Council/Policy Board is still needed. For example, some sub-alternatives previously considered may be worth removing because the

reasons they were not selected during final action on the HCR Framework/Addenda are likely still valid (e.g., the non-preferred Percent Change Approach sub-alternatives). The FMAT/PDT can provide advice on the scope of this management action for the Council/Policy Board to consider in August. The FMAT/PDT can also consult with the Commissioner/Council member workgroup later during the development process if there are questions related to the scope.

- An FMAT/PDT member asked why the Percent Change Approach was selected as the preferred alternative when final action was taken on the HCR Framework/Addenda.
 - The Council/Policy Board thought the other alternatives in the framework/addenda required further development before they were ready to be adopted. The binned approaches (i.e., Alternatives D and E) did not have any example measures, which created uncertainty for the Council/Policy Board and the public as to what implementing these other alternatives would look like. The Percent Change Approach is easily understood and was chosen to be implemented while the other alternatives could be further developed.
- An FMAT/PDT member asked for more information about the role of the new Commissioner/Council member workgroup and if it was intended that this group will represent the view of the entire Council/Policy Board.
 - The exact role of the new Commissioner/Council member workgroup and how it will interact with the FMAT/PDT will not be formalized until after the August Council/Policy Board meeting. However, its overall purpose is to make the management action development process smoother so the group does not have to wait for Council/Policy Board meetings to check-in. It will allow the group to get more feedback along the way as alternatives are developed.
- An FMAT/PDT member asked if it is the role of the Council/Policy Board or the FMAT/PDT to define the statement of the problem for this management action. They noted that the statement of the problem might be better determined by managers as a policy decision, rather than from the technical perspective of the FMAT/PDT.
 - The statement of the problem will need the approval of the Council/Policy Board. However, the FMAT/PDT can provide recommendations. The statement of the problem for the previous HCR Framework/Addenda originated from the larger conversations about the recreational reform initiative.

Role of the SSC

Late into the development of the previous HCR Framework/Addenda, the Council's SSC was directed by the Council to provide a qualitative evaluation regarding the potential effect of the alternatives on the SSC's assessment and application of risk and uncertainty in determining ABCs. An SSC sub-committee was formed and a report that represented the consensus view of the SSC was produced in time for final action. The SSC is not usually involved in the development of management actions, but the public, Policy Board, and Council may be interested in their involvement with this new management action given the precedent set by the last action. Staff asked the FMAT/PDT for their input on if the Council were to involve the SSC, what the SSC's role could be and where in the draft timeline would make the most sense for them to be involved.

An FMAT/PDT member noted that the SSC appeared unfamiliar with the FMAT process and their conclusions on the draft HCR Framework/Addenda did not take some key information into account, such as the Recreational Demand Model (RDM). This was likely because the SSC was involved so late in the development of the framework/addenda. However, the SSC was able to provide some useful input, such as the pros and cons to the binned approaches and concerns about the metrics being used. The FMAT/PDT agreed that if the SSC is involved this time, they should be involved earlier in the process. An FMAT/PDT member further suggested providing ongoing presentations to the SSC or a sub-group to keep them well-informed about the development of the management action.

One FMAT/PDT member suggested involving the SSC with the FMAT/PDT's consideration of using fishing mortality (F) based reference points for at least one of the alternatives. This FMAT/PDT member noted this was a concept discussed early in the process by the HCR FMAT/PDT, but had been put aside. A member of the SSC suggested using an F-based reference point for the Percent Change Approach at the last FMAT/PDT meeting for the HCR Framework/Addenda. The FMAT/PDT member noted that although the FMAT/PDT could figure out the methods, there could also be benefits to working with the SSC to further develop this idea.

Analysis Needs

Staff next requested any initial input the FMAT/PDT may have on analyses needed to support the development of this new management action. For example, an analysis on partitioning F-based reference points between the commercial and recreational sectors.

It was noted an Environmental Assessment will likely be needed, but a decision on the appropriate document to comply with the National Environmental Policy Act will not be able to be made until the specific topics of this management action are finalized.

A majority of the discussion was focused on a suggestion by an FMAT/PDT member to use the Management Strategy Evaluation (MSE) developed for summer flounder to provide a quantitative assessment of the risks and trade-offs associated with all the alternatives. Applying an MSE to the alternatives might address an issue raised during the previous iteration of the HCR Framework/Addenda about the binned approaches (i.e., Alternatives D and E). At that time, the binned approaches were designed to have measures assigned to each of the bins that were estimated to achieve a specified target level of harvest, catch, or fishing mortality. However, the RDM was not available, so the FMAT/PDT was unable to put forward example measures for the bins. As a result, the public and the Council/Policy Board did not believe they had enough information to compare the binned approach alternatives, as it was not clear what measures would look like if these alternatives were implemented. If the MSE is used as part of the development of this new management action, the FMAT/PDT could compare the performance of all the alternatives that will be developed for this new management action for each of the species.

It was also noted that the RDM is now available for summer flounder, scup, and black sea bass and could be used to generate example measures for all the bins. An R Shiny app for the RDM is in development, which will allow for a more efficient analysis of how changes to the regulations would impact harvest, angler satisfaction, and other metrics. However, the RDM would only provide information on how

measures work under current biomass levels. The MSE uses a different biological model to explore how metrics change at different stock biomass levels. However, as previously noted, the MSE model is only available for summer flounder. One FMAT/PDT member mentioned previous discussions of potentially modifying the assumptions used in the RDM to analyze measures under different stock status conditions, for example, by modifying the availability of different size classes input into the model. An FMAT/PDT member familiar with the RDM said the MSE would be a much more appropriate model for analyzing the impacts of measures under different stock conditions as it is designed to achieve this purpose.

The FMAT/PDT was informed that the developers of the summer flounder MSE were interested in being involved in this effort, as it would illustrate how the MSE can be used for management purposes. The FMAT/PDT was in favor of further discussing this with the MSE modelers during their next meeting. It was noted that although the FMAT/PDT will discuss this idea further with the developers, this did not mean that this approach will necessarily be used during the development of this management action, as the FMAT/PDT still needs the Council/Board's approval to continue exploration of this approach.

A member of staff reminded the FMAT/PDT of an idea introduced by the previous FMAT/PDT for the binned approaches. It was proposed that moving to a new bin could be a trigger to revise measures to achieve the appropriate target level of harvest, dead catch, or fishing mortality, without the measures having been pre-determined. Several FMAT/PDT members supported considering this idea further during the development of the new management action. FMAT/PDT members were also reminded by staff that it is not required to focus only on how the alternatives were previously developed, but they can think creatively, as long as the FMAT/PDT works under the scope of the action as approved by the Council/Policy Board.

Management Action Name

A new name for this management action, to replace Harvest Control Rule 2.0, was suggested by staff: Summer Flounder, Scup, Black Sea Bass, and Bluefish Recreational Measures Setting Process Framework/Addenda. The FMAT/PDT unanimously approved this new name and the acronym "RMS" for short.

Public Comment

One member of the public asked how many of the species this management action applies to are currently at 150% B/B_{MSY} or above. Staff confirmed that at the time of this meeting, it was just scup and black sea bass, as summer flounder is in a low biomass category and bluefish is overfished. However, there will be management track assessments for scup, summer flounder, and bluefish this summer which may lead to updates in stock status. This member of the public also wanted to know if the FMAT/PDT was still considering using a recruitment-based metric in any of the options. The FMAT/PDT noted that it was a secondary metric in the Biological Reference Point Alternative, which will be further developed in this new management action. Lastly, this member of the public stated their support for involving the entire SSC in this new management action as this framework relies on multiple analyses. In addition, the SSC can also provide advice on the potential of overfishing with each of the alternatives. They were also very supportive of involving the SSC during the first iteration of the HCR.



**Summer Flounder, Scup, Black Sea Bass, and Bluefish
Harvest Control Rule 2.0 Framework/Addenda
Fishery Management Action Team (FMAT)/Plan Development Team (PDT)
Meeting #2 Summary
July 11, 2023**

FMAT/PDT Attendees: Tracey Bauer (ASMFC), Julia Beaty (MAFMC), Chelsea Tuohy (ASMFC), Mike Celestino (NJ DEP), Alexa Galvan (VMRC), Mark Grant (GARFO), Marianne Randall (GARFO), Scott Steinback (NEFSC), Rachel Sysak (NY DEC), Corinne Truesdale (RI DEM), Sam Truesdell (MA DMF), Sara Turner (GARFO)

Other Attendees: Lou Carr-Harris (NEFSC), Geret DePiper (NEFSC), Sarah Gaichas (NEFSC), James Fletcher (United National Fisherman’s Association/Council AP member), Michelle Duval (Council member), Alan Bianchi (NC DMF), Greg DiDomenico (Lund’s Fisheries/Council AP member), Will Poston (American Saltwater Guides Association)

Overview

The FMAT/PDT met via webinar on Tuesday, July 11, 2023 to review background information on the Summer Flounder Management Strategy Evaluation (MSE) and discuss the feasibility of using it in the development of the Harvest Control Rule 2.0 Framework/Addenda.

Briefing materials considered by the FMAT/PDT are available at: <https://www.mafmc.org/council-events/2023/jul-11/sfsbsbb-hcr2-fmat-pdt>

Summer Flounder Management Strategy Evaluation (MSE) Presentation by NEFSC Staff

Northeast Fisheries Science Center (NEFSC) staff presented a summary of the Summer Flounder MSE’s modeling approach and outcomes, as well as a proposed potential application to the development of the Harvest Control Rule (HCR) 2.0 Framework/Addenda. NEFSC staff indicated the Summer Flounder MSE would be most effective as an approach to assess uncertainty across the alternatives and trade-offs between alternatives. It would allow the FMAT/PDT to test and refine all the alternatives, as well as potentially identify alternatives that are not performing as intended or that are not feasible to implement.

NEFSC staff proposed using a stepwise approach with the MSE to analyze the alternatives and assist in the development of the HCR 2.0 Framework/Addenda within the current timeline. The stepwise approach would first analyze broader concepts and then, if time allows, the analyses could get more complex, moving towards more realistic scenarios. The process, as proposed by NEFSC staff, would be as follows:

- 1) Initial analyses would focus on testing the performance of thresholds included in each alternative’s metrics (e.g., trends in biomass or recruitment, SSB/SSB_{MSY}), the definitions of those thresholds, and their associated uncertainty. Everything in the MSE would be held constant except the chosen threshold to test performance and compare across alternatives. The

thresholds could then be refined or, if necessary, the alternative could be discarded entirely if it is consistently performing poorly.

- 2) The management responses to crossing the thresholds could then be investigated by testing different definitions of “liberal” and “restrictive” measures or testing different target levels of harvest, catch, or fishing mortality of the different bins.
- 3) Lastly, if time allows, the MSE could test the performance of potential regulations within alternatives. However, due to limited time, regulations may only be developed and tested for one alternative (e.g., potentially narrowed down by the previous two steps) and regulations may be simplified compared to current regulations (e.g., coastwide or regional measures may be evaluated, rather than state-specific regulations).

NEFSC staff noted several important considerations if the Summer Flounder MSE is used during the development of this management action:

- The FMAT/PDT will need to define starting points for measures and thresholds of metrics before any analysis with the MSE can begin.
- Analyses completed using the MSE will need to be prioritized to remain within the current timeline of the HCR 2.0 Framework/Addenda, which must be finalized before the original HCR Framework/Addenda sunsets at the end of 2025. In addition, prioritizing how the MSE is used will help the modelers and the FMAT/PDT avoid getting too caught up with the complexity of some of the current alternatives.
- There will need to be clearly defined roles for both the modeling team and the FMAT/PDT to maximize efficiency.
- Transparency in how the MSE can be used in the development of this management action will be important to manage expectations of the Policy Board (Policy Board), Mid-Atlantic Fishery Management Council (Council), and public. For example, it’s not likely there will be enough time to test regulations at the state level; however, the performance of the specific metrics under each alternative can be evaluated at the state level.

Discussion

The FMAT/PDT supported using a stepwise approach with the MSE and agreed it will be helpful to think about the roles of the FMAT/PDT and modelers. For example, what the FMAT/PDT would provide versus what the modelers will need to work on will need to be identified. The Council and Policy Board will tentatively approve a draft document in about a year. It will be important to have some analysis completed by then, so Council and Policy Board members are able to make an informed decision about what alternatives to keep in the document for public comment. NEFSC staff agreed, noting that this highlights the importance of prioritizing analyses to meet those deadlines. The group needs to identify the most important questions to focus on.

Another FMAT/PDT member noted that the Policy Board/Council adopted the Percent Change Approach originally because the complexity of some of the other alternatives and lack of example measures made it challenging to evaluate what implementing the other approaches would look like. The Percent Change Approach was the simplest alternative, and there was not enough time to assess the relative performance of the other options.

One FMAT/PDT member asked if Scientific and Statistical Committee (SSC) Review Panel comments about the Recreational Demand Model (RDM; one of the components of the MSE) have been addressed, or how addressing them would fit into the timeline. NEFSC staff responded there has been a lot of work to address these comments and a short report was written to summarize how the RDM was updated to address the Review Panel's concerns. For example, the RDM, and consequently the MSE were updated to use survey data from 2020, giving an improved representation of angler preferences. They also incorporated additional layers of uncertainty from MRIP into the model. NEFSC staff are currently working on updating the model for this upcoming year's recreational management measures setting process and creating a Shiny app so Monitoring and Technical Committee members can run the RDM on their own. In addition, NEFSC staff are in the process of generating appropriate catch-per-trip distributions for reference years from MRIP to estimate future catch-per-trip.

An FMAT/PDT member noted that the projection period in the original Summer Flounder MSE analysis was 26 years, and questioned if this was an appropriate projection period for an analysis of the HCR 2.0 Framework/Addenda alternatives given the different goals. Alternatives may perform differently based on the length of the projection period. NEFSC staff agreed that this was something the group would need to think about and discuss before any analysis. It will be important to decide what metrics should be analyzed over a short term versus a long term (e.g., angler satisfaction every year versus stock status over many years). In general, MSEs are developed to look at long-term performance. Another FMAT/PDT member said it would be useful to have the projection period long enough to compare the previous method for setting measures (i.e., the goal to meet but not exceed the RHL every year) and the binned approaches (i.e., leave regulations alone over a wide range of conditions until a threshold is crossed). A long-term trend may be able to test stability of measures compared to the outcomes of those measures.

An FMAT/PDT member asked if anything can be concluded or inferred about the performance of the alternatives for black sea bass, scup, and bluefish using the MSE, given that the MSE was developed for summer flounder specifically. The RDM has been developed for summer flounder, scup, and black sea bass, but will not be developed for bluefish given the high amount of catch and release in the fishery. NEFSC staff confirmed this would be a summer flounder-centric approach and did not recommend adding in population dynamics to the MSE for any other species given the tight timeline. However, they did suggest the information learned about the performance of the alternatives for summer flounder may be able to inform decisions for the other species. In addition, NEFSC staff proposed that parameters of the MSE could be changed to reflect the status of other species, and then used to test the performance of alternatives. For example, a higher overfishing limit (OFL) could be implemented in the model, additional uncertainty could be added, or start with a higher biomass. Another FMAT/PDT member agreed that the MSE may be able to answer general questions about the performance of the alternatives for scup, black sea bass and bluefish, but this will not cover all species-specific differences. An FMAT/PDT member also noted that adjusting parameters in the MSE to reflect the status of other species will also have implications for the projection periods that were just discussed. This member believed a longer projection period could also be more useful here because the results would not be driven by initial conditions.

Next Steps

The Council and Policy Board will discuss use of the MSE during their August 2023 meeting. If they give their approval to use the MSE in the development of alternatives for the HCR 2.0 Framework/Addenda, the FMAT/PDT and NEFSC staff will plan future meetings to carry out this work. In the meantime, FMAT/PDT members and NEFSC staff are encouraged to continue to think about 1) how the MSE may or may not be able to assist in the development of this management action and 2) what MSE metrics should be used to measure success, and 3) recommendations of thresholds for metrics in the alternatives. It was also noted that, if the Council/Policy Board give their approval, the earlier the group can start working on this, the better.

Public Comment

One member of the public asked how the HCR 2.0 Framework/Addenda will consider summer flounder's new stock status of overfishing. Staff noted the summer flounder 2024-2025 specifications discussion, which will take into consideration summer flounder's overfishing status, will occur before the Policy Board/Council discusses this management action. In addition, many of the alternatives already have consideration for overfishing built into them.

Another member of the public asked how the fishermen will have any confidence in the models when the models still recommend catching the largest, oldest female fish. NEFSC staff noted that during the development of the Summer Flounder MSE, there were similar conversations about the ways to track the harvest of male and females in the model. The model does not contain any differential stock dynamics, but the harvest of males and females was used as an indicator of performance. NEFSC staff's preference is to not stray too far from the actual model originally used in management support. However, there are ways to address this concern.



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Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 26, 2023
To: Council and Board
From: Karson Cisneros, Council staff
Subject: 2024-2025 Bluefish Specifications

On Wednesday, August 9, the Council and Board will set 2024-2025 bluefish specifications and 2024 recreational management measures after reviewing the recommendations of the SSC, Monitoring Committee, and Advisory Panel. Materials listed below are provided for the Council and Board's consideration of this agenda item.

As noted below, one material is behind another tab, and some will be available on the [August 2023 Meeting Page](#) at a later date.

- 1) Advisory Panel meeting summary from July 31, 2023 (*to be posted once available*)
- 2) Monitoring Committee meeting summary from July 26, 2023 (*to be posted once available*)
- 3) July 2023 Scientific and Statistical Committee meeting report (*to be posted behind Tab 16 once available*)
- 4) Staff memo on 2024 bluefish recreational measures dated July 19, 2023
- 5) Staff memo on 2024-2025 bluefish specifications dated July 14, 2023
- 6) 2023 Bluefish Management Track Assessment
- 7) 2023 Bluefish Advisory Panel Fishery Performance Report
- 8) 2023 Bluefish Fishery Information Document



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MEMORANDUM

Date: July 19, 2023
To: Dr. Chris Moore, Executive Director
From: Karson Cisneros, Staff
Subject: 2024 Bluefish Recreational Management Measures

Introduction and Background

In August 2023, the Council and Board will set 2024-2025 catch and landings limits and management measures. Before the August meeting, the Scientific and Statistical Committee (SSC) will meet to recommend 2024-2025 acceptable biological catches (ABCs) based on the 2023 bluefish management track assessment on Monday July 24. The Monitoring Committee (MC) will meet after the SSC, on Wednesday July 26, to recommend 2024-2025 commercial and recreational annual catch targets (ACTs), quotas and recreational harvest limits (RHLs), and recreational management measures.

There are 4 potential sets of 2024-2025 ABCs based on different stock projections. These differ based on assumptions related to 2023 removals and which coefficient of variation to the overfishing limit (OFL CV) is selected by the SSC. Depending on the SSC's recommended ABCs and the MC recommended sector catch and landings limits, a potential range of RHLs for 2024 is 11.96 – 15.11 million pounds. In 2020 and 2021 there were recreational ACL overages that triggered paybacks; however, in 2022 there was no recreational ACL overage, and no accountability measures are triggered for 2024. This memo describes recent bluefish recreational fishery performance and several considerations and recommendations related to setting recreational management measures for 2024.

Recent Fishery Performance

In 2022, estimated recreational landings were 11.03 million pounds and dead discards were 3.09 million pounds, based on the [2023 Management Track Assessment](#) (Table 1, Figure 1). Since 2018, recreational landings have dropped to the lowest values of the time series with a 2018-2021 average harvest of 12.81 million pounds.

More detailed recreational catch and harvest estimates by state and mode for 2022 are provided in the 2023 [Bluefish Fishery Information Document](#). The greatest harvest of bluefish by weight in 2022 occurred in New York with 3.45 million pounds, followed by Florida with 1.96 million

pounds, and North Carolina, Massachusetts, and New Jersey with a little over 1 million pounds harvested. Average weights, based on dividing MRIP landings in weight by landings in number for each state, suggest that bluefish size tends to increase along the north Atlantic coast.

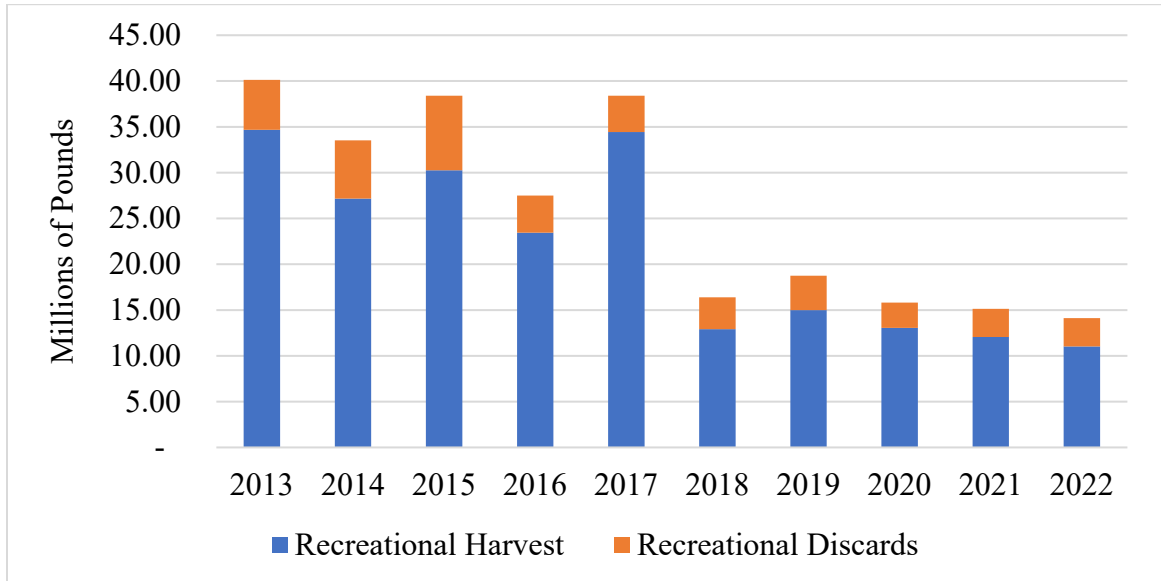


Figure 1: Recreational bluefish harvest and dead discards in millions of pounds from 2013-2022 using estimates from the 2023 Management Track Assessment, including an updated discard mortality rate of 9.4% (previously 15%).

Table 1: Summary of bluefish recreational harvest and management measures, 2016-2023. In 2019, recreational landings were provided using new MRIP estimates while the RHL was developed using old MRIP estimates so cannot be directly compared.

Management Measures	RHL	Rec. Harvest, Old MRIP	Rec. Harvest, New MRIP	RHL Overage/underage	Rec. Bag Limit (# fish)	
2016	11.58	9.54	23.44	-2.04	15	
2017	9.65	9.52	34.44	-0.13	15	
2018	11.58	3.64	12.91	-7.94	15	
2019	11.62	--	14.99	--	15	
2020*	9.48	--	13.06	+ 3.58	3: Private*	5: For-Hire*
2021	8.34	--	12.06	+ 3.72	3: Private	5: For-Hire
2022	13.89	--	11.03	-2.86	3: Private	5: For-Hire
2023	22.14	--	--	--	3: Private	5: For-Hire

* The bag limit reductions from 15 to 3/5 fish were not implemented by all states until mid-late 2020.

Dead Discard Estimation

In previous years, the MC has discussed two disparate approaches used to characterize discards in the recreational fishery. The Greater Atlantic Regional Fisheries Office (GARFO) and the Council implemented an approach that used the MRIP estimated mean weight (by year, state, and wave)

of harvested fish (A+B1) multiplied by the number of released fish (MRIP-B2s by year, state, and wave) and an assumed 15% release mortality. The second approach, used in NEFSC stock assessment discard estimates, applied a length-weight relationship to released fish data from the MRIP, American Littoral Society tag releases, and volunteer angler surveys from Connecticut, Rhode Island, and New Jersey.

Through the [2022 Bluefish Research Track Assessment](#), recreational discard estimation methodology and data inputs were evaluated. In this assessment, the recreational dead discard component of the catch was calculated using the season/region length frequency distributions developed from all the recreational biological sampling data for released fish. This includes additional lengths from a volunteer angler tagging program in South Carolina not incorporated in previous assessments. For each year, expanded lengths were calculated by season/region and summed to get a seasonal total length distribution. Seasonal length-weight parameters were then used to calculate total seasonal weight and summed for a total annual release weight. The discard mortality rate was also revised from 15% to 9.4% based on an updated literature review and analysis since the 2015 Benchmark Assessment.

The peer reviewed recreational discard estimation approach from the 2022 Research Track Assessment was used in the [2023 Management Track Assessment](#) and will also be used by GARFO for catch accounting.

Compliance

During recent management uncertainty discussions, the MC has requested information about compliance in the recreational fishery. To address federal enforcement, staff reached out to the Office of Law Enforcement and the U.S. Coast Guard for bluefish recreational fishery violations. Both offices reported no violations from 2019-2022; however, they also noted variable and sometimes limited numbers of recreational boardings.

In addition, individual states report violations through their annual bluefish compliance reports. From 2020-2022 there were a total of 71 citations and 64 warnings reported from 3 states and include bag and minimum size related violations (Table 2). Florida and Georgia have a minimum size of 12 inches total length, while Maryland and the Potomac River Fisheries Commission have an 8-inch minimum size.

Table 2. Bluefish compliance data by violation 2020-2022 from state compliance reports.

	Bag Limit Citations	Size Limit Citations	Bag Limit Warnings	Size Limit Warnings	# of States Reporting Violations
2020	13	4	8	5	3
2021	28	3	12	20	3
2022	19	4	9	8	3

2024 Recreational Harvest Limit

There are 4 potential 2024 ABCs and therefore sector ACLs based on different stock projections. These differ based on assumptions related to 2023 removals and which OFL CV is selected, both

of which will be recommended by the SSC. In previous years, the SSC has selected an OFL CV=100%, which is the value used in the [2024-2025 staff specifications memo](#). However, the SSC may change the CV to 60% given the stock assessment improvements.

From the ACLs, the MC can recommend a management uncertainty buffer to derive the ACTs. As discussed in the specifications memo, staff recommend setting the ACLs=ACTs due to the improvements to the stock assessment and specifically the recreational discard estimation. These improvements allow for a better understanding of total catch and decrease the management uncertainty related to differing discard estimates.

In the specifications memo, staff also recommend using 2021-2022 average recreational discards as expected discards to derive the RHLs from the ACTs. Bag limit reductions going from 15 fish to 3/5 fish were not implemented by all states until mid-late 2020. In addition, MRIP used data from 2018 and 2019 to fill in COVID-19 related data gaps in 2020. Because of this, there are imputed 2020 data using years that had a 15 fish bag limit. Given these considerations, 2021-2022 average discards of 3.08 million pounds may be more indicative of 2024-2025 expected discards. Last year, the MC recommended using 2021 discards for 2023 projected discards using this rationale. Based on these recommendations for ACTs and discards, the range of RHLs for 2024 is 11.96 – 15.11 million pounds and described in Table 3.

Table 3. Calculations of the 2024 RHL under different OFL CVs and assumptions of total removals in 2023, to be determined by the SSC, and using staff recommended ACTs and expected discards.

	2024 RHL (mil lb)	
	OFL CV=100%	OFL CV=60%
2023 ABC caught	11.96	14.06
2023 Frebuild caught	13.06	15.11

2024 Expected Recreational Harvest

As mentioned in the previous section, COVID-related MRIP imputations used 2018 and 2019 data to estimate 2020 harvest, which were years where the 3 and 5-fish bag limits were not in place. Therefore, the 2020 data may not reflect a harvest estimate that takes into consideration the smaller bag limits. The first full year of the currently implemented recreational management measures of a 3 fish bag limit for private and shore modes and a 5 fish bag limit for the for-hire mode was 2021. Because of this, **staff recommend using 2021-2022 average recreational harvest of 11.54 million pounds as the expected harvest in 2024, for comparison with the 2024 RHL.**

Under the scenarios in Table 3, expected recreational harvest of 11.54 million pounds falls close to the RHLs under the OFL CV=100% and further below the RHLs under and OFL CV=60% (Table 4).

Table 4. The percentage increase between the expected 2024 harvest of 11.54 mil lb and the four potential 2024 RHLs as outlined in Table 3.

% RHL increase from expected 2024 harvest		
	OFL CV=100%	OFL CV=60%
2023 ABC caught	3.6%	21.8%
2023 Frebuild caught	13.2%	30.9%

2024 Recreational Management Measures

Given the potential to liberalize measures under some of the RHLs described above (Table 4), two sets of estimates of percent change in harvest relative to status quo measures are presented in Table 5 for the MC’s consideration. In the past, the MC has discussed that comparing multiple methods of calculating the impacts of liberalized measures can be useful. Both methods use the 2021-2022 MRIP survey microdata available for download and assume equal levels of noncompliance to status quo conditions.¹

The first method calculates the percent reduction in harvest and assumes that the percent liberalization would be equal to that reduction. Percent reduction is calculated by assuming those that harvested the full bag at the current bag limit would harvest the full bag limit at a lower limit. The second method assumes a log linear relationship between the bag limit and percent change in harvest. Under this modeling approach, harvest still increases as bag limits liberalize, however the rate of increase tapers, which may better describe the data. This method was used for summer flounder bag limit liberalizations by some states in 2022.

Given that the size of bluefish available to anglers can vary across the coast, and the importance of the snapper fishery (small bluefish) to some states, size limits may be a more appropriate tool for individual states to consider. Similarly, seasonal availability varies by state so coastwide seasonal closures to allow for increased bag limits are currently not recommended for consideration for federal waters measures.

If the SSC selects an OFL CV=100%, staff recommend no changes to the current recreational management measures of 5 fish (for-hire) and 3 fish (private angler) bag limits in 2024. Based on the 2023 management track assessment, the bluefish stock was no longer overfished, however it was not rebuilt to the biomass target in 2022. The bluefish stock remains under a 7-year rebuilding plan with a rebuilt target of 2028. The ability to maintain status quo measures without a predicted overage can provide stability in recreational management measures as the stock continues to rebuild. In addition, as described in [the 2023 Fishery Performance Report \(FPR\)](#), advisors are reporting more and larger bluefish in 2023. Bluefish can be spatially and temporally patchy, however a potential increase in availability to anglers up and down the coast may result in increased harvest under the same bag limits. **If the SSC selects an OFL CV=60%, staff recommend that the MC consider these stock, availability, and stability factors along with Table 5 to inform any bag limit liberalizations for 2024.**

¹ <https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-downloads>

Table 2: Two sets of calculations estimating the percent change in harvest relative to status quo bag limits by sector. Negative numbers indicate a reduction in harvest and positive numbers indicate an increase in harvest.

Percent liberalization or reduction: liberalization = inverse reduction					
Bag Limit	3	4	5	6	7
Private Angler	SQ	7.32%	24.69%	62.77%	*
For Hire	-0.21%	-0.07%	SQ	0.07%	0.21%
Total	-0.21%	7.25%	24.69%	62.84%	0.21%

Percent liberalization or reduction: regression analysis					
Bag Limit	3	4	5	6	7
Private Angler	SQ	7.28%	12.36%	16.51%	20.01%
For Hire	-0.29%	-0.08%	SQ	0.22%	0.34%
Total	-0.29%	7.20%	12.36%	16.73%	20.35%

*This methodology would require calculating a reduction based on a negative bag limit so cannot be used for liberalizations over a 6 fish bag limit.



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MEMORANDUM

Date: July 14, 2023
To: Dr. Chris Moore, Executive Director
From: Karson Cisneros, Staff
Subject: 2024-2025 Bluefish Specifications

Executive Summary

This memorandum includes information to assist the Mid-Atlantic Fishery Management Council's (Council's) Scientific and Statistical Committee (SSC) and Monitoring Committee (MC) in recommending 2024-2025 specifications for bluefish.

The Magnuson-Stevens Act (MSA) requires each Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for acceptable biological catch (ABC), preventing overfishing, and achieving maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC. In addition, the MC established by the Fishery Management Plan (FMP) is responsible for developing recommendations for management measures designed to achieve the recommended catch limits. The SSC recommends ABCs that address scientific uncertainty, while the MC recommends annual catch targets (ACTs) that address management uncertainty and management measures to constrain harvest to the landings limits.

Bluefish Management Track Assessments in 2019 and 2021 indicated that the stock was overfished, and overfishing was not occurring in 2018 and 2019, respectively. The Council and the Atlantic States Marine Fisheries Commission's Bluefish Board (Board) approved the Bluefish Allocation and Rebuilding Amendment at their June 2021 meeting. The rebuilding portion of the Amendment includes a 7-year constant fishing mortality plan that began in 2022. Projections are planned to be rerun every two years through the Northeast Region Coordinating Council (NRCC) assessment process to ensure adequate rebuilding progress is being made.

A Research Track Assessment for bluefish was peer reviewed in December 2022. This assessment incorporated data through 2021 and made several changes to data inputs and the modeling framework used for bluefish. A Management Track Assessment conducted in June 2023 concluded that the stock was not overfished, however not fully rebuilt to the biomass target reference point, and overfishing was not occurring in 2022.

Two sets of 2024-2025 ABC projections are included in this document for the SSC's consideration. The first set assumes that 2023 removals are equal to the 2023 ABC, and the second set assumes 2023 removals are equal to the catch associated with F_{rebuild} . Both use an OFL CV=100%, consistent with previous SSC recommendations. The total removals from the first assumption are closer to the most recent 10-year average of total catch, while the total removals from the second assumption are closer to the most recent 3-year average of total catch (as outlined on page 10-11). Staff recommend ABCs under the second assumption, resulting in a 2024 ABC of 18.78 million pounds (8,517 mt) and a 2025 ABC of 23.04 million pounds (10,450 mt). These ABCs represent a 39% and 25% decrease from the 2023 ABC, respectively.

Staff recommend no buffers for either sector for management uncertainty, resulting in ACLs=ACTs (Table 2). Staff recommend using 2021-2022 average discards from the 2023 Management Track Assessment as expected discards for both the recreational and commercial sector to derive landings limits. Lastly, staff recommend no transfers while the stock remains under a rebuilding plan. A separate memo will outline staff recommendations for 2024-2025 recreational management measures to be discussed by the MC at their July 2023 meeting.

Table 1. Bluefish specifications for 2024-2025 under the Council’s 7-year rebuilding plan, using ABC projections that assume 2023 removals will be equal to the 2023 ABC and an OFL CV=100%.

Management Measure	Year				Basis
	2024		2025		
	mil lb.	mt	mil lb.	mt	
OFL	25.90	11,734	27.49	12,467	Stock assessment projections
ABC	17.48	7,929	21.83	9,903	Derived by SSC
Commercial ACL	2.45	1,110	3.06	1,386	ABC x 14% (per FMP)
Commercial Management Uncertainty	0	0	0	0	Derived by the Monitoring Committee
Commercial ACT	2.45	1,110	3.06	1,386	Comm. ACL - Comm. Management Uncertainty
Recreational ACL	15.03	6,819	18.78	8,517	ABC x 86% (per FMP)
Recreational Management Uncertainty	0	0	0	0	Derived by the Monitoring Committee
Recreational ACT	15.03	6,819	18.78	8,517	Rec. ACL - Rec. Management Uncertainty
Commercial Discards	0.02	11	0.02	11	2021-2022 ave. discards (2023 MTA)
Recreational Discards	3.08	1,396	3.08	1,396	2021-2022 ave. discards (2023 MTA)
Commercial TAL	2.42	1,100	3.03	1,376	Commercial ACT - commercial discards
Recreational TAL	11.96	5,423	15.70	7,121	Recreational ACT - recreational discards
Combined TAL	14.38	6,523	18.73	8,497	Commercial TAL + Recreational TAL
Transfer	0	0	0	0	No transfer recommended while rebuilding
Commercial Quota	2.42	1,100	3.03	1,376	Commercial TAL +/- transfer
RHL	11.96	5,423	15.70	7,121	Recreational TAL +/- transfer

Note: six decimal places were used for calculations and rounded to two decimal places for table display purposes, therefore slight mismatches may appear due to rounding.

Table 2. Staff recommended bluefish specifications for 2024-2025 under the Council’s 7-year rebuilding plan, using ABC projections that assume 2023 removals will be equal to the catch associated with fishing at the revised $F_{rebuild} = 0.183$ and an OFL CV=100%.

Management Measure	Year				Basis
	2024		2025		
	mil lb.	mt	mil lb.	mt	
OFL	26.82	12,166	28.26	12,818	Stock assessment projections
ABC	18.78	8,517	23.04	10,450	Derived by SSC
Commercial ACL	2.63	1,192	3.23	1,463	ABC x 14% (per FMP)
Commercial Management Uncertainty	0	0	0	0	Derived by the Monitoring Committee
Commercial ACT	2.63	1,192	3.23	1,463	Comm. ACL - Comm. Management Uncertainty
Recreational ACL	16.15	7,325	19.81	8,987	ABC x 86% (per FMP)
Recreational Management Uncertainty	0	0	0	0	Derived by the Monitoring Committee
Recreational ACT	16.15	7,325	19.81	8,987	Rec. ACL - Rec. Management Uncertainty
Commercial Discards	0.02	11	0.02	11	2021-2022 ave. discards (2023 MTA)
Recreational Discards	3.08	1,396	3.08	1,396	2021-2022 ave. discards (2023 MTA)
Commercial TAL	2.61	1,182	3.20	1,453	Commercial ACT - commercial discards
Recreational TAL	13.07	5,929	16.74	7,592	Recreational ACT - recreational discards
Combined TAL	15.68	7,111	19.94	9,044	Commercial TAL + Recreational TAL
Transfer	0	0	0	0	No transfer recommended while rebuilding
Commercial Quota	2.61	1,182	3.20	1,453	Commercial TAL +/- transfer
RHL	13.07	5,929	16.74	7,592	Recreational TAL +/- transfer

Note: six decimal places were used for calculations and rounded to two decimal places for table display purposes, therefore slight mismatches may appear due to rounding.

Recent Catch and Landings

Total fishery removals, including recreational harvest and dead discards, and commercial landings and dead discards from 1985-2022, are presented in Figure 1. These values are from the 2023 Bluefish Management Track Assessment and may differ from the preliminary values in the Fishery

Information Document. Recreational landings were 11.03 million pounds in 2022, a 1.03 million pound decrease compared with 2021, and the lowest harvest for the time series. This coincides with lower effort, as the number of recreational trips¹ in 2022 (7,409,375) is the lowest reported in the 2000-2022 period. Recreational catch and harvest and commercial landings by state are shown in Table 3. In 2019, the Council and Board approved recreational management measures to constrain harvest to the RHL, which included going from a 15 fish bag limit across all modes to a 3-fish bag limit for private and shore modes and a 5-fish bag limit for the for-hire mode. The recreational management measures were not implemented by all states until mid-late 2020. The first full year of these more restrictive bag limits was 2021.

Based on dealer data, commercial landings were 2.14 million pounds in 2022, a 0.07 million pound increase compared with 2021, which had the lowest commercial landings in the time series. Dealer data for 2022 indicate that most of the bluefish commercial landings were taken by gillnet (47%), trawl/dredge (44%), handline (6%), and other (3%).

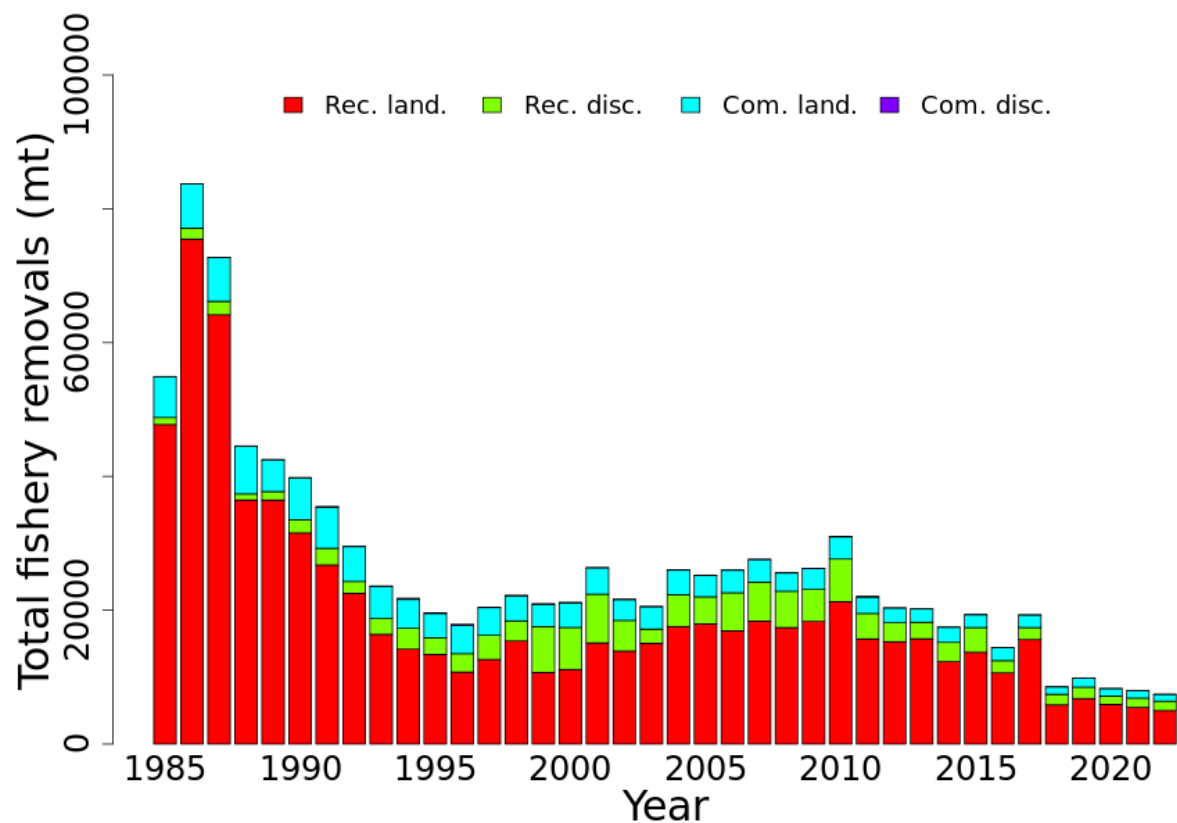


Figure 1. Bluefish total catch from 1985-2022. Source: 2023 Bluefish Management Track Assessment.

¹ Estimated number of recreational fishing trips where the primary target was bluefish or bluefish were harvested regardless of target, Maine – Florida's East Coast. Source: MRIP.

Table 3. Bluefish recreational catch and commercial landings information by state in 2022. Sources: MRIP query May 2023; Commercial dealer data retrieved May 2023. These values may differ from the NMFS final 2023 catch accounting.

State	Recreational						Commercial
	Harvest			Catch	Released Alive	Dead Discards ²	Landings
	Pounds	Number	Ave. Wt. ¹ (lbs)	Number	Number	Number	Pounds
ME	73,697	8,326	8.9	31,061	22,735	2,137	0
NH	1,598	181	8.8	1,397	1,216	114	0
MA	1,277,203	183,470	7.0	1,533,782	1,350,312	126,929	254,138
RI	593,444	92,704	6.4	341,709	249,005	23,406	240,460
CT	541,930	105,910	5.1	715,327	609,417	57,285	41,597
NY	3,446,600	1,710,502	2.0	7,144,950	5,434,448	510,838	368,473
NJ	1,077,834	510,820	2.1	1,728,918	1,218,098	114,501	203,595
DE	51,550	38,676	1.3	548,873	510,197	47,959	6,716
MD	213,345	249,382	0.9	484,947	235,565	22,143	10,059
VA	215,999	262,360	0.8	1,534,477	1,272,117	119,579	187,526
NC	1,336,592	1,533,911	0.9	9,731,098	8,197,187	770,536	736,595
SC	259,372	487,654	0.5	3,194,059	2,706,405	254,402	0
GA	35,911	43,335	0.8	317,567	274,232	25,778	0
FL	1,957,211	1,125,847	1.7	3,768,905	2,643,058	248,447	93,018
Total	11,354,535	6,353,078	1.8	31,077,070	24,723,992	2,324,055	2,142,304

¹ Average weight is the pounds harvested divided by the number of fish harvested. ²Recreational dead discards are calculated as 9.4% of total recreational discards based on the updated discard mortality rate from the 2022 Research Track Assessment.

2023 Harvest to Date

As of July 5, 2023, preliminary recreational estimates from MRIP are only available for waves 1 and 2 combined (January through April). Preliminary 2023 recreational harvest for waves 1-2 is approximately 0.8 million pounds and total catch is 5.1 million fish. For comparison, in 2018-2022, waves 1-2 harvest has ranged from 1.2-3.6 million pounds, and total catch has ranged from 4.5-11.8 million fish.

Preliminary commercial harvest is available through June 28, 2023 and shows increased landings relative to this time last year (Figure 2). So far in 2023, 1.2 million pounds have been landed, comprising 29% of the coastwide commercial quota.

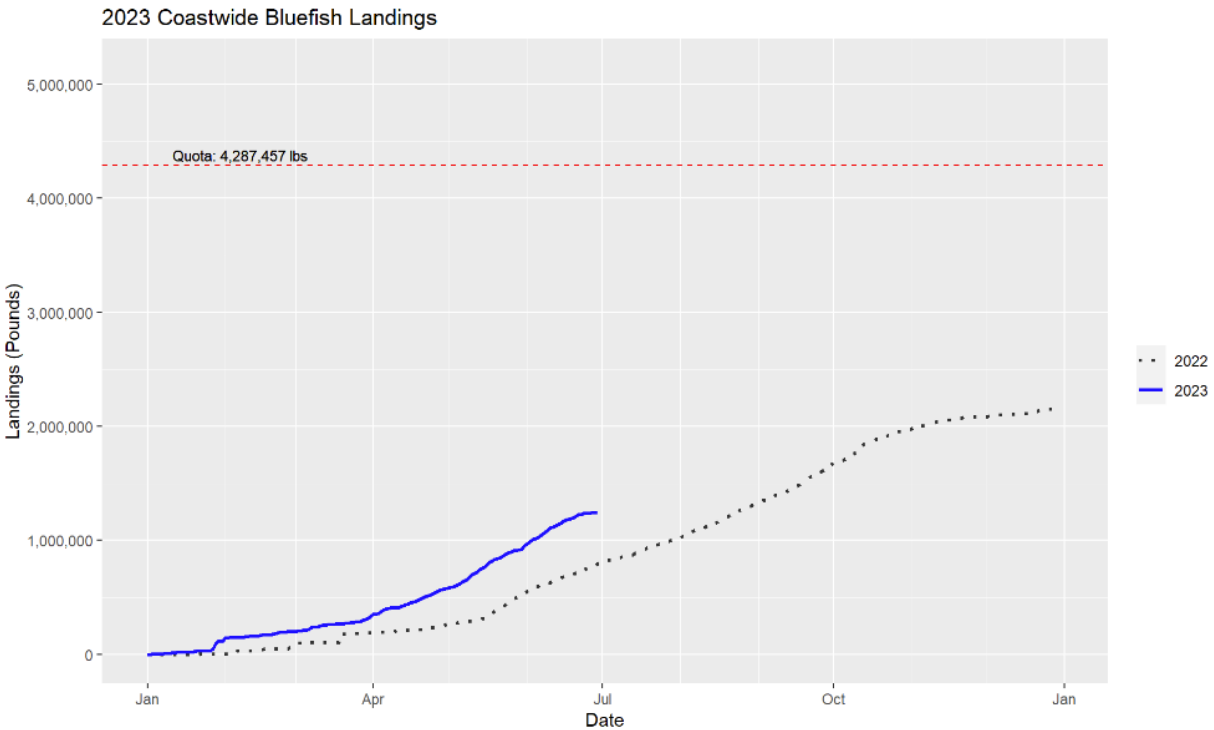


Figure 2. Bluefish landings coastwide in 2023 (blue solid line) through June 28, compared with 2022 (dotted line). Source: [NOAA Fisheries Atlantic Bluefish Quota Monitoring Site](#), accessed July 5th, 2023. Quota monitoring by state is also available on this page.

Stock Status and Biological Reference Points

Bluefish Management Track Assessments in 2019 and 2021 indicated that the stock was overfished, and overfishing was not occurring in 2018 and 2019, respectively. The Council and Board approved a rebuilding plan that began in 2022 and includes a 7-year constant fishing mortality.

In December 2022, a Bluefish Research Track Assessment was peer reviewed and accepted which found that the stock was not overfished, however not fully rebuilt, and overfishing was not occurring in 2021. This assessment underwent several updates relative to past research recommendations including the development of an MRIP index using a species-association method to identify bluefish trips, updating the estimate of natural mortality used in the assessment model, evaluating model results that aggregated all model input data at a seasonal and regional level of resolution, combining multiple fishery independent surveys using Vector Autoregressive Spatiotemporal (VAST) as part of this assessment, examination of differences in the calibrated and uncalibrated MRIP estimates of bluefish catch, spatial stratification of recreational release length frequencies when calculating the weight of dead recreational releases, and the migration to the Woods Hole Assessment Model (WHAM) framework.

The June 2023 Management Track Assessment built upon the 2022 research track assessment and found that the bluefish stock was not overfished and overfishing was not occurring in 2022

(Figures 3 and 4; Table 4). Spawning stock biomass (SSB) in 2022 was estimated to be 52,747 mt which is 60% of the biomass target (SSB_{MSY} proxy = 88,131 mt; Figure 3). The 2022 fully selected fishing mortality was estimated to be 0.152 which is 64% of the overfishing threshold (F_{MSY} proxy = 0.239; Figure 4).

The bluefish stock has experienced a slight increase in SSB over the past 5 years, coinciding with a decrease in F. Recruitment has increased each year since 2019, and the terminal year recruitment (137 million fish) is the highest value since 2005. Both commercial and recreational fisheries have had low catches since 2018, all well below the time series average of 26,386 mt. With the low catches since 2018, fishing mortality has decreased and remained well below F_{MSY} (0.239).

Table 4. Summary of stock status and biological reference points resulting from the SAW/SARC 60 process in 2015 to the Management Track Assessment in 2023. There was an Operational Stock Assessment in 2019 not included below with very similar reference points and the same stock status as the 2021 Management Track Assessment.

	2015 SAW/SARC 60	2021 Management Track Assessment	2022 Research Track Assessment	2023 Management Track Assessment
Stock Status	Not Overfished, Not Overfishing	Overfished, Not Overfishing	Not Overfished, Not Overfishing	Not Overfished, Not Overfishing
SSB_{MSY}	223.42 mil lb (101,343 mt)	444.74 mil lb (201,729 mt)	202.60 mil lb (91,897 mt)	194.30 mil lb (88,131 mt)
½ SSB_{MSY}	111.71 mil lb (50,672 mt)	222.37 mil lb (100,865 mt)	101.30 mil lb (45,949 mt)	97.15 mil lb (44,066 mt)
F_{MSY}	0.190	0.181	0.249	0.239
Terminal Year of data	2014	2019	2021	2022

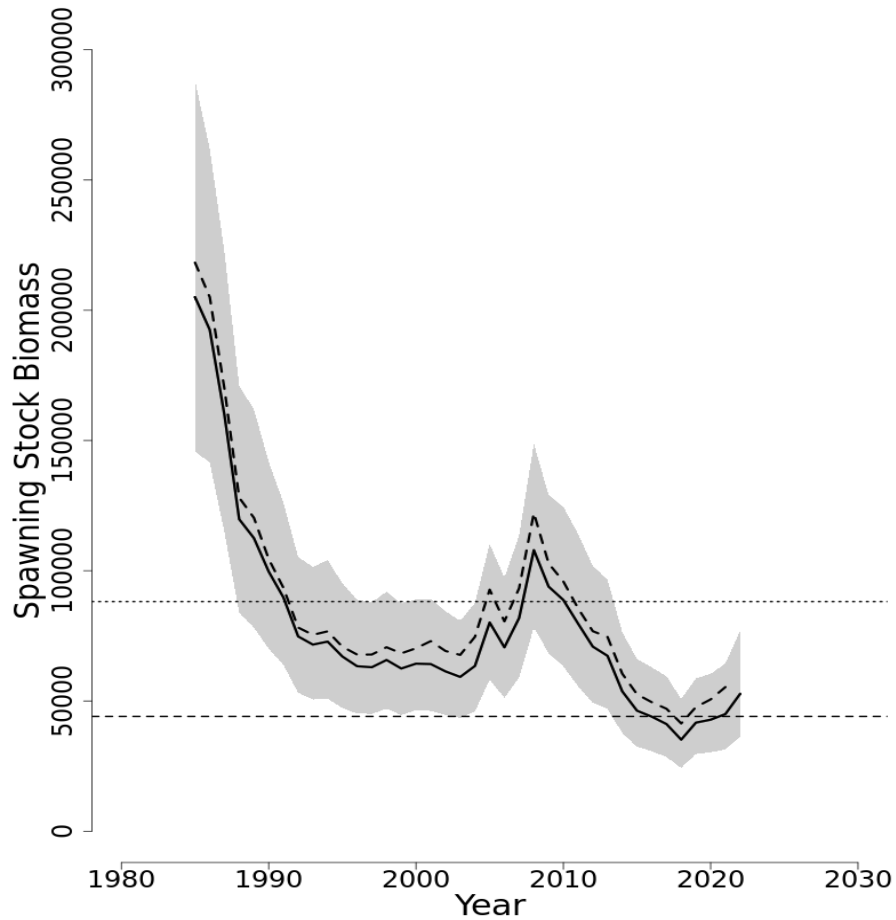


Figure 3. Atlantic bluefish spawning stock biomass (SSB) from 1985-2022 from the 2023 Management Track Assessment (solid line) and the 2022 Research Track Assessment (dashed line). The horizontal dotted black line is the updated SSB_{MSY} proxy = $SSB_{35\%}$ = 88,131 mt, and the dashed line is the $SSB_{Threshold}$ = 44,066 mt from the 2023 Management Track Assessment. The shaded areas represent the approximate 90% lognormal confidence intervals. Source: 2023 Bluefish Management Track Assessment.

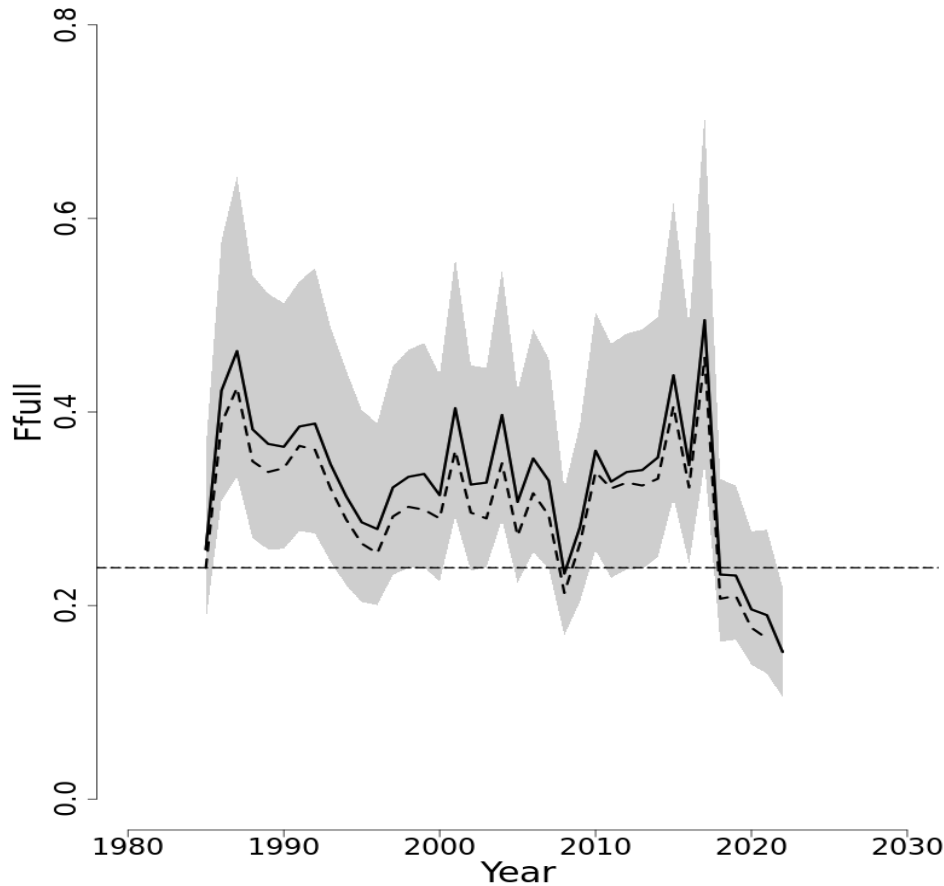


Figure 4. Trends in fishing mortality (F_{full}) for Atlantic bluefish from the 2023 Management Track Assessment (solid line) and the 2022 Research Track Assessment (dashed line). The horizontal dashed line is the updated F_{MSY} proxy = $F_{35\%}$ = 0.239. The shaded areas represent the approximate 90% lognormal confidence intervals. Source: 2023 Bluefish Management Track Assessment.

Projections

The Council’s rebuild policy for bluefish is to achieve rebuilding within a seven-year period, commencing in 2022. A constant F strategy was selected such that biomass in 2028 has a 50% chance of exceeding the B_{msy} proxy rebuilding target. Based on the 2023 Management Track Assessment, $F_{rebuild}$ was re-calculated to be 0.183 using a projection that assumes the plan’s constant F strategy. The MAFMC risk policy (assuming an OFL CV = 100%) was applied to OFL proxies at $F_{rebuild}$ in short term projections to generate ABC values for 2024-2025 that are consistent with implementing the rebuilding schedule as recommended by the SSC in 2021. ABC projections assuming an OFL CV=60% are also available in the July 2023 SSC meeting materials should the SSC change their OFL CV based on the recent assessment improvements.

Tables 5 and 6 below provide two different sets of projections based on different assumptions of removals in 2023 (Source: Tony Wood, NEFSC, Personal Communication). The first set (Table 5) assumes 2023 removals will be equal to the 2023 ABC of 13,890 mt. From 2020-2022, the total catch ranged from 7,436 mt to 8,294 mt and averaged 7,898 mt. Given that total catch over the past 3 years has fallen well below the 2023 ABC of 13,890 mt, this value may not be the

preferred assumption for catch in 2023. However, when comparing catch over a longer time period, the most recent 10-year average total catch is 13,285 mt, and 2013-2017 total catches were all above the 2023 ABC.

The second set of projections (Table 6) assumes 2023 removals will be equal to the catch associated with fishing at the revised $F_{rebuild} = 0.183$, which is very close to the average F over the past three years (0.18). Because of this, catch associated with $F_{rebuild}$ (10,827 mt) may be a more reasonable assumption for catch in 2023 (Table 6).

Table 5. Short term projection of total fishery catch, spawning stock biomass (SSB: with 90% CI), and fishing mortality on fully selected ages for bluefish based on a harvest scenario assuming annual ABC values calculated from OFLs at $F_{rebuild}$ (0.183) and the Council risk policy (CV = 100%) for 2024 and 2025. **Removals in 2023 were assumed to be equal to the previously established ABC value of 13,890 mt (grey cells).** Source: Tony Wood, NEFSC, Personal Communication.

Year	OFL Catch (mt)	OFL SSB (mt)	OFL Ffull
2023	13,890	59,135 (39,120 - 89,391)	0.239
2024	11,734	65,030 (41,240 - 102,546)	0.183
2025	12,467	70,974 (43,350 - 116,201)	0.183
Year	ABC Catch (mt)	ABC SSB (mt)	ABC Ffull
2023	13,890	59,135 (39,120 - 89,391)	0.239
2024	7,929	66,706 (41,439 - 107,379)	0.121
2025	9,903	75,757 (43,303 - 132,534)	0.137

Table 6. Short term projection of total fishery catch, spawning stock biomass (SSB: with 90% CI) for bluefish based on a harvest scenario assuming annual ABC values calculated from OFLs at $F_{rebuild}$ (0.183) and the Council risk policy (CV = 100%) for 2024 and 2025. **Removals in 2023 were assumed to be the resulting catch of fishing at $F_{rebuild} = 0.183$ (grey cells).** Source: Tony Wood, NEFSC, Personal Communication.

Year	OFL Catch (mt)	OFL SSB (mt)	OFL Ffull
2023	10,827	60,471 (41,382 - 88,364)	0.183
2024	12,166	67,719 (45,503 - 100,782)	0.183
2025	12,818	73,426 (46,758 - 115,304)	0.183
Year	ABC Catch (mt)	ABC SSB (mt)	ABC Ffull
2023	10,827	60,471 (41,382 - 88,364)	0.183
2024	8,517	69,335 (45,753 - 105,074)	0.125
2025	10,450	77,982 (46,763 - 130,043)	0.141

Review of Prior SSC Recommendations

In July 2021, the SSC recommended new ABCs for 2022-2023, which incorporated the results of the 2021 Management Track Assessment. To make this recommendation, the SSC reviewed 2020 fishery performance and materials from the Management Track Assessment.

The SSC also discussed the Council-approved rebuilding schedule, including the treatment of the rebuilding F proposed by the Council and its implications for generating ABCs. The Council’s rebuild policy is to achieve rebuilding within a seven-year period commencing in 2022. A constant F strategy was selected such that biomass in 2028 has a 50% chance of exceeding the B_{msy} proxy rebuilding target. Given the basis for the rebuilding, the SSC determined that the constant F for rebuilding in seven years (denoted as $F_{rebuild,7} = 0.154$) should be treated as a F_{msy} proxy. As such, the usual Council risk policy, P^* criteria, and OFL CV process should apply. Failure to include scientific uncertainty through the direct application of $F_{rebuild,7}$ alone could generate instances where the probability of overfishing exceeded 0.5 between 2022 and 2028. Accounting for scientific uncertainty and the resulting lower ABCs should also increase the chance (i.e., greater than 50%) of exceeding the B_{msy} target to rebuild the stock within the seven-year timeframe.

The SSC recommended that a CV of 100% be applied to the OFL estimate as an appropriate ABC and noted that the chief uncertainty for bluefish relates to patterns in the revised MRIP estimates.

The SSC also discussed the most significant sources of uncertainty, ecosystem considerations, and research recommendations to reduce uncertainty. These discussions can be found summarized here: <https://www.mafmc.org/s/July-2021-SSC-Report.pdf>.

In 2022, the SSC reviewed 2021 bluefish fishery performance and did not recommend any changes from the previously implemented 2023 ABC of 30.62 million pounds (13,890 mt).

Staff Recommendation for 2024-2025 ABCs

Staff recommend ABCs of 18.78 million pounds (8,517 mt) in 2024 and 23.04 million pounds (10,450 mt) in 2025. These ABCs implement the bluefish rebuilding plan consistent with previous years (as described above) and assume that the catch associated with $F_{rebuild}$ is caught in 2023 (Table 6). This catch is closer to recent years’ average catch than the assumption that the full 2023 ABC is caught, while still allowing for some increase in catch. It is too early to determine whether catch in 2023 will be higher than recent years, however commercial harvest is trending higher than this time last year (Figure 2) and the bluefish Advisory Panel commented on seeing many more bluefish last year than in previous years in several states.² An increase in availability may not necessarily result in increased harvest in the recreational fishery due to the high catch and release nature of the fishery, however it may result in an increased total catch due to increased discards.

Table 7. Staff recommended bluefish ABCs for 2024-2025 which use the catch associated with $F_{rebuild}$ as 2023 total removals as shown in Table 6. These ABCs are consistent with the Council’s agreed upon rebuilding plan.

Year	ABC (mt)	ABC (mil lb)
2024	8,517	18.78
2025	10,450	23.04

² See 2023 Fishery Performance Report: <https://www.mafmc.org/council-events/2023/july-2023-ssc-meeting>

Sector Specific Catch and Landings Limits

The flow chart in Figure 4 on page 15 was used to derive the sector specific catch and landings limits shown in Tables 1 and 2.

Management Uncertainty

The option to use management uncertainty buffers were formally incorporated into the specifications process through the [2011 Omnibus Amendment](#), which also implemented ABCs and ACLs and brought FMPs into compliance with the 2007 reauthorization of the MSA. In 2021, [Amendment 7 to the Bluefish FMP](#) was implemented, allowing for the consideration of sector specific management uncertainty buffers rather than a buffer applied before the sector specific limits are derived.

Due to recent recreational overages (2020 and 2021) and uncertainty in discards for the commercial and recreational fisheries, the MC has discussed the need to develop justified quantitative approaches to recommend a management uncertainty buffer between the ACL and ACT. The Bluefish MC/TC met in March 2023 to initiate this discussion and a small subgroup formed to further develop tools for quantifying management uncertainty. The subgroup modified the ASMFC risk and uncertainty tool to apply to areas identified by the subgroup to be potential sources of uncertainty in the bluefish fishery. The tool converts a combination of quantitative and qualitative scores into a quantitative representation of uncertainty. The full MC is reviewing the subgroup's proposed tool (emailed to the MC/TC June 27, 2023) and will consider its use while discussing management uncertainty in each sector. At their March meeting, the MC also recommended the inclusion of recent discard variability for each sector within the specifications memo to approach discard uncertainty more quantitatively (Table 8).

Table 8. Most recent 5- and 3-year recreational and commercial discard variability in millions of pounds as requested by the MC/TC in March 2023.

	2018-2022		2020-2022	
Discards (mil lb)	Range	Standard deviation	Range	Standard deviation
Recreational	0.99	0.3875	0.32	0.1817
Commercial	0.01	0.0042	0.01	0.0055

As discussed in previous sections, the Bluefish Research Track Assessment passed peer review in December 2022. This assessment incorporated commercial discard estimates that were previously unknown (though assumed to be negligible) and updated data and methods for recreational discard estimates. This accepted methodology for estimating recreational discards will be used by the Greater Atlantic Regional Fisheries Office (GARFO) and the Northeast Fisheries Science Center (NEFSC) moving forward, ensuring alignment between GARFO's catch accounting and the assessments. The improvements to discard estimation in both sectors allow for a better understanding of catch in each sector, therefore decreasing the amount of management uncertainty. Because of this, staff do not recommend buffers for either sector between the ACLs and ACTs in 2024-2025. Next year, the MC will review 2025 specifications and will revisit the need for an uncertainty buffer in 2025.

Recreational

In 2022, the recreational fishery landed 11.03 million pounds compared to the 14.11 million pounds RHL. Recreational catch totaled 14.11 million pounds and fell below the 2022 ACL; therefore, no accountability measures will be applied in 2024.

Staff recommend using the 2021-2022 average recreational discards from the 2023 Management Track Assessment for expected discards to derive the 2024-2025 RHLs. This is based on the previous MC recommendation, starting with the 2023 RHL, to use years after the decrease in bag limits which were implemented throughout 2020 (timing varied by state and federal waters).

Given the considerations in this section, staff recommend a recreational ACL=ACT of 16.15 million pounds in 2024 and 19.81 million pounds in 2025, and an RHL of 13.07 million pounds in 2024 and 16.74 million pounds in 2025 (Table 2). A separate recreational memo will outline staff recommendations for 2024-2025 recreational management measures to be discussed by the MC at their July 2023 meeting.

Commercial

In 2022, the commercial fishery landed 2.26 million pounds compared to the 3.54-million-pound quota and commercial discards were 0.02 million pounds. No commercial accountability measures have been triggered to be applied in 2024. Staff recommend using the 2021-2022 average commercial discards from the 2023 Management Track Assessment for expected discards in 2024-2025. Although a 3-year average may be preferred, staff selected 2021-2022 and excluded 2020 due to large COVID-related data gaps in 2020 observer coverage.

Based on these considerations, staff recommend a commercial ACL=ACT of 2.63 million pounds in 2024 and 3.23 million pounds in 2025, and a commercial quota of 2.61 million pounds in 2024 and 3.20 million pounds in 2025 (Table 2).

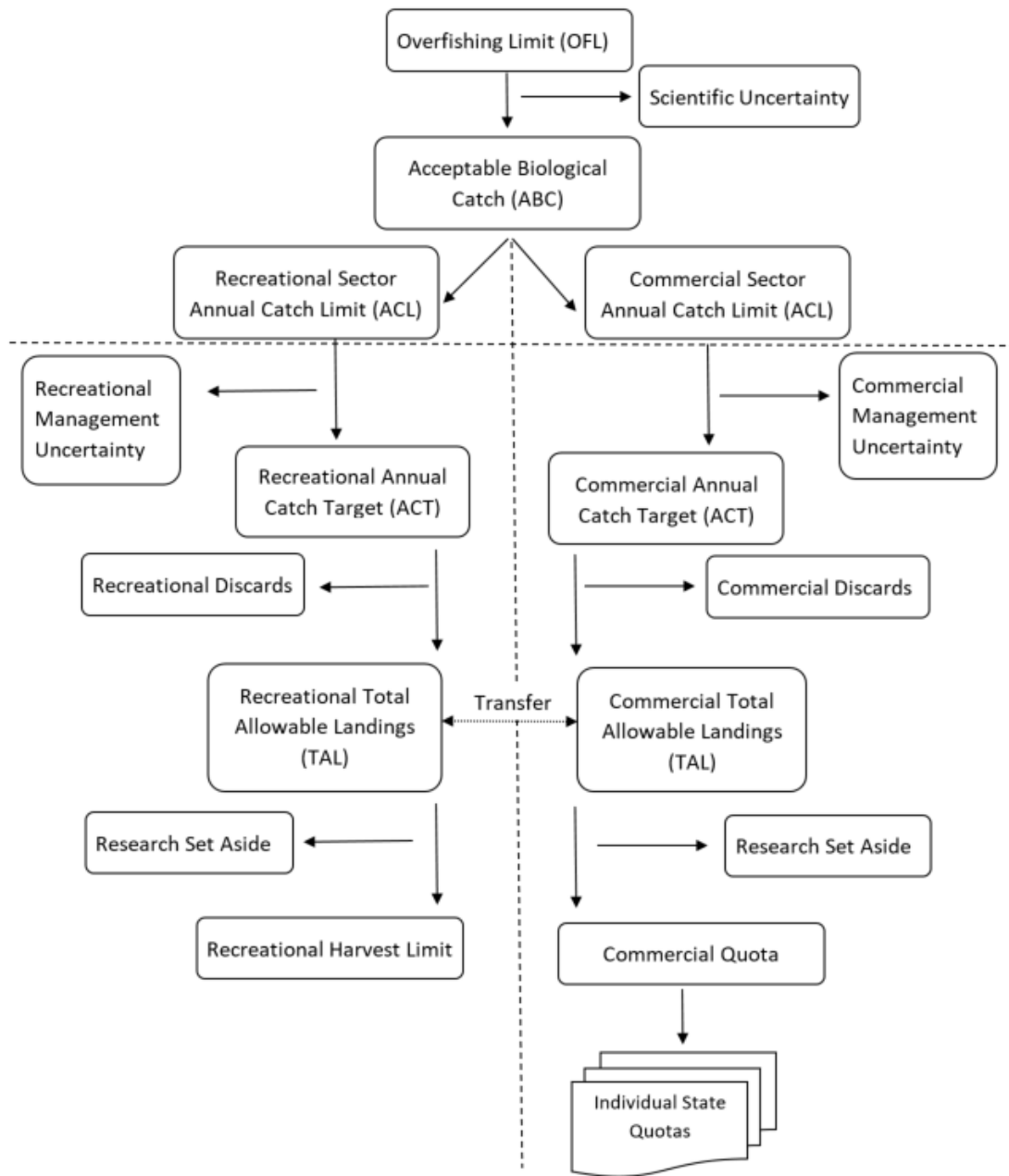
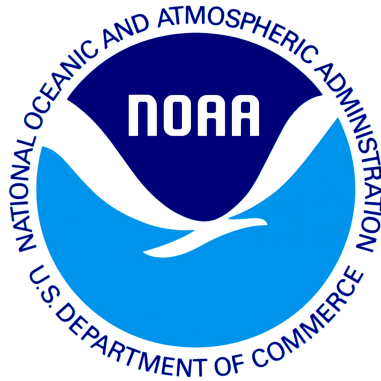


Figure 4. Flowchart of bluefish catch and landings limits. The research set aside program is currently discontinued so no further calculations are needed from the sector specific TALs to the RHL and commercial quota.

draft working paper for peer review only



Atlantic Bluefish

2023 Management Track Assessment Report

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Fisheries Science Center
Woods Hole, Massachusetts

Compiled 06-27-2023

This assessment of the Atlantic Bluefish (*Pomatomus saltatrix*) stock is a management track update assessment of the existing 2022 research track assessment (NEFSC 2022). Stock status for bluefish from the research track assessment (data through 2021) found the stock was not overfished, and overfishing was not occurring. The current assessment updates commercial fishery catch data, recreational fishery catch data, research survey indices of abundance, and the analytical state-space WHAM assessment model and reference points through 2022.

Additionally, stock projections have been updated through 2025

State of Stock: Based on this updated assessment, the Atlantic Bluefish (*Pomatomus saltatrix*) stock is not overfished and overfishing is not occurring (Figures 1-2). Retrospective bias in model results was considered minor and retrospective adjustments were not necessary. Spawning stock biomass (SSB) in 2022 was estimated to be 52,747 (mt) which is 60% of the biomass target ($SSB_{MSY\ proxy} = 88,131$ (mt); Figure 1). The 2022 fully selected fishing mortality was estimated to be 0.152 which is 64% of the overfishing threshold ($F_{MSY\ proxy} = 0.239$; Figure 2).

Table 1: Catch and status table for Atlantic Bluefish. All weights are in (mt) recruitment is in (000s) and F_{Full} is the fishing mortality on fully selected ages (age 2). Model results are from the current updated WHAM assessment.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<i>Data</i>										
Recreational landings	15,732	12,324	13,725	10,634	15,620	5,857	6,800	5,923	5,471	5,002
Recreational discards	2,472	2,880	3,690	1,838	1,794	1,578	1,702	1,253	1,391	1,400
Commercial landings	1,977	2,251	1,917	1,946	1,876	1,105	1,359	1,112	1,090	1,025
Commercial discards	12	18	14	14	7	8	10	7	12	9
Catch for Assessment	20,194	17,473	19,345	14,431	19,297	8,548	9,871	8,294	7,963	7,436
<i>Model Results</i>										
Spawning Stock Biomass	67,325	53,698	46,283	43,981	41,153	35,152	41,702	42,811	44,979	52,747
Ffull	0.34	0.353	0.438	0.345	0.495	0.232	0.231	0.196	0.19	0.152
Recruits (age 0)	136,314	120,570	101,743	69,713	112,997	111,734	68,541	74,543	97,120	137,139

Table 2: Comparison of reference points estimated in the 2022 research track assessment and from the current assessment update. An $F_{35\%}$ proxy was used for the overfishing threshold and was based on SPR calculations. The SSB_{MSY} is calculated using the value of SPR_{35%} and mean recruitment.

	2022	2023
$F_{MSY\ proxy}$	0.249	0.239 (0.199 - 0.287)
SSB_{MSY} (mt)	91,987	88,131 (65,576 - 118,445)
MSY (mt)	19,618	18,979 (14,025 - 25,684)
Median recruits (age 0) (000s)	103,133	108,035
<i>Overfishing</i>	No	No
<i>Overfished</i>	No	No

Projections: Short-term projections were conducted in WHAM, and incorporate model uncertainty, auto-regressive processes and uncertainty in recruitment and numbers-at-age. Removals in 2023 were assumed to be equal to the 2023 ABC (13,890 MT), and projections were carried forward for years 2024-2025 at $Frebuild = 0.183$. The MAFMC council risk policy ($CV = 100\%$) was used to develop ABC values in each year, and the projection was re-iterated using these values as annual removals in place of $Frebuild$. Projected ABC catch in 2024 and 2025 based on this approach is 7,929 MT and 9,903 MT, respectively.

The projection uses 5-year averages for natural mortality, maturity, fishery selectivity and weights-at-age. The

5-year average was selected for those parameters to capture the most recent conditions while still smoothing some interannual variability. Projections were not retrospectively adjusted, as the adjusted terminal year estimates of F and SSB fell within the 90% confidence intervals of the unadjusted values.

Table 3: Short term projections of total fishery catch and spawning stock biomass for Atlantic Bluefish based on a harvest scenario assuming annual ABC values calculated from Frebuild (0.183) and the MAFMC risk policy between 2024 and 2025. Catch in 2023 was assumed to be the previously established ABC value of 13,890 (mt).

Year	Catch (mt)	SSB (mt)	Ffull
2023	13890	59135 (39120 - 89391)	0.239
Year	Catch (mt)	SSB (mt)	Ffull
2024	7929	66706 (41439 - 107379)	0.121
2025	9903	75757 (43303 - 132534)	0.137

Special Comments:

- What are the most important sources of uncertainty in this stock assessment? Explain, and describe qualitatively how they affect the assessment results (such as estimates of biomass, F, recruitment, and population projections).

Some of the important sources of uncertainty relate to assessment data inputs and the availability of information that would help better understand the dynamics of bluefish. Research recommendations from the recent research track assessment fully detail these uncertainties and data needs. A list of some of the research ideas designed to improve the bluefish stock assessment and reduce some of the uncertainties include:

- 1. Expanding the collection of recreational release length frequency data. The bluefish assessment stratifies recreational release lengths by region, and data in the southern region is lacking. These southern fish tend to be smaller and improved information pertaining to the size distribution of the southern fish would help refine the estimate of recreational discard weight.*
- 2. Addressing the uncertainty around temporal availability of bluefish to the fisheries and surveys. The research track assessment made significant advancements in developing an index of bluefish availability based on forage fish in the diets of bluefish like predators. This forage fish index was incorporated into a companion assessment model as a covariate on MRIP CPUE catchability. Further developing this index will help improve the assessment model fit to the MRIP CPUE information, which is an important index that helps scale biomass estimates from the model.*
- 3. Develop fishery dependent or independent sampling programs to provide information on larger, older bluefish. The dynamics of this size class are not well sampled or understood.*
- 4. Develop an updated recreational release mortality study to derive a more informed estimate of recreational discard mortality. Recreational discards are a significant proportion of the total catch so reducing the uncertainty around the release mortality is important.*

- Does this assessment model have a retrospective pattern? If so, is the pattern minor, or major? (A major retrospective pattern occurs when the adjusted SSB or F_{Full} lies outside of the approximate joint confidence region for SSB and F_{Full}).

The 7-year Mohn's ρ , relative to SSB, was 0.14 in the 2022 assessment and was 0.22 in 2022. The 7-year Mohn's ρ , relative to F, was 0.10 in the 2022 assessment and was 0.14 in 2022. This is considered a minor retrospective pattern for both SSB and F because the ρ adjusted estimates of 2022 SSB ($SSB_{\rho}=43235$) and 2022 F ($F_{\rho}=0.177$) were within the approximate 90% confidence regions around SSB (36,194 - 76,871) and F (0.105 - 0.219).

- Based on this stock assessment, are population projections well determined or uncertain? If this stock is in a rebuilding plan, how do the projections compare to the rebuilding schedule?

Population projections for Atlantic Bluefish are reasonably well determined. Shifting to WHAM for model projections has allowed for the incorporation of model uncertainty, auto-regressive processes, and the uncertainty in recruitment and numbers-at-age. The retrospective pattern in F and SSB is considered minor (within the 90% CI of both F and SSB), however, the ρ values of F and SSB have increased when compared to the previous research track assessment.

The Atlantic Bluefish stock is in a rebuilding plan with a rebuild date of 2028. Frebuild was re-calculated using a projection that assumes a constant F strategy, such that biomass in 2028 has a 50% chance of exceeding the SSB_{msy} proxy; Frebuild was calculated to be 0.183. The MAFMC risk policy was applied using this Frebuild strategy in short term projections to generate ABC values that are consistent with the rebuilding schedule for the next two years.

- Describe any changes that were made to the current stock assessment, beyond incorporating additional years of data and the effect these changes had on the assessment and stock status.

A change to the way the age-length keys (ALKs) were developed from the research track, which used full multinomial age-length keys, was implemented for this Atlantic Bluefish assessment update. Instead of using full multi-nomial age-length keys, a hybrid approach was used, and the holes in the ALKs were filled with the multi-nomial model fits. This approach to filling ALK holes is now consistent with the methodology used for other NEFSC stock assessments and with the NEFSC STOCKEFF program. This new method resulted in minor changes to the results of SSB and F compared to the 2022 research track assessment results.

- If the stock status has changed a lot since the previous assessment, explain why this occurred.

Stock status of Atlantic Bluefish has not changed from the status determined in the research track assessment.

- Provide qualitative statements describing the condition of the stock that relate to stock status.

The Atlantic Bluefish stock has experienced a slight increase in SSB over the past 5 years, coinciding with a decrease in F . Recruitment has increased each year since 2019, and the terminal year recruitment (137 million fish) is the highest value since 2005. Both commercial and recreational fisheries have had low catches since 2018, all well below the time series average of 26,386 MT. With the low catches since 2018, fishing mortality has decreased and remained well below F_{MSY} (0.239). The low catches in recent years are partially a result of bag limit implementation as part of the rebuilding plan. However, these lower catches could also be due to decreased bluefish availability. Anecdotal evidence suggests larger bluefish stayed offshore and inaccessible to most of the recreational fishery in recent years.

- Indicate what data or studies are currently lacking and which would be needed most to improve this stock assessment in the future.

The recent bluefish research track identified several new research recommendations that would improve our understanding of bluefish dynamics and help better assess the population through the current or future models. These recommendations include: expand collection of recreational release length frequency data, continue development and refinement of the forage fish / availability index as well as incorporation of this index into a base model for bluefish management advice, initiate additional fisheries-independent surveys or fishery-dependent sampling programs to provide information on larger, older bluefish, continue coastwide collection of length and age samples from fishery-independent and -dependent sources, refinement and development of indices of abundance, and develop a recreational demand model.

- Are there other important issues?

WHAM allows for incorporation of environmental covariates on the catchability of survey indices, and a companion model was developed for the research track that leveraged this capability. The companion model investigated a forage fish index as a covariate on catchability of the MRIP CPUE and showed promise for

continued development. The covariate led to an overall decreasing trend in catchability over time. This model will be further developed leading up to the 2025 management track assessment, at which time it could be considered for the primary model.

References:

Northeast Fisheries Science Center. 2022. 2022 Bluefish Research Track Assessment NOAA Fisheries, Northeast Fish Sci Cent Ref Doc. TBD; 116 p. <https://apps-nefsc.fisheries.noaa.gov/saw/sasi.php>

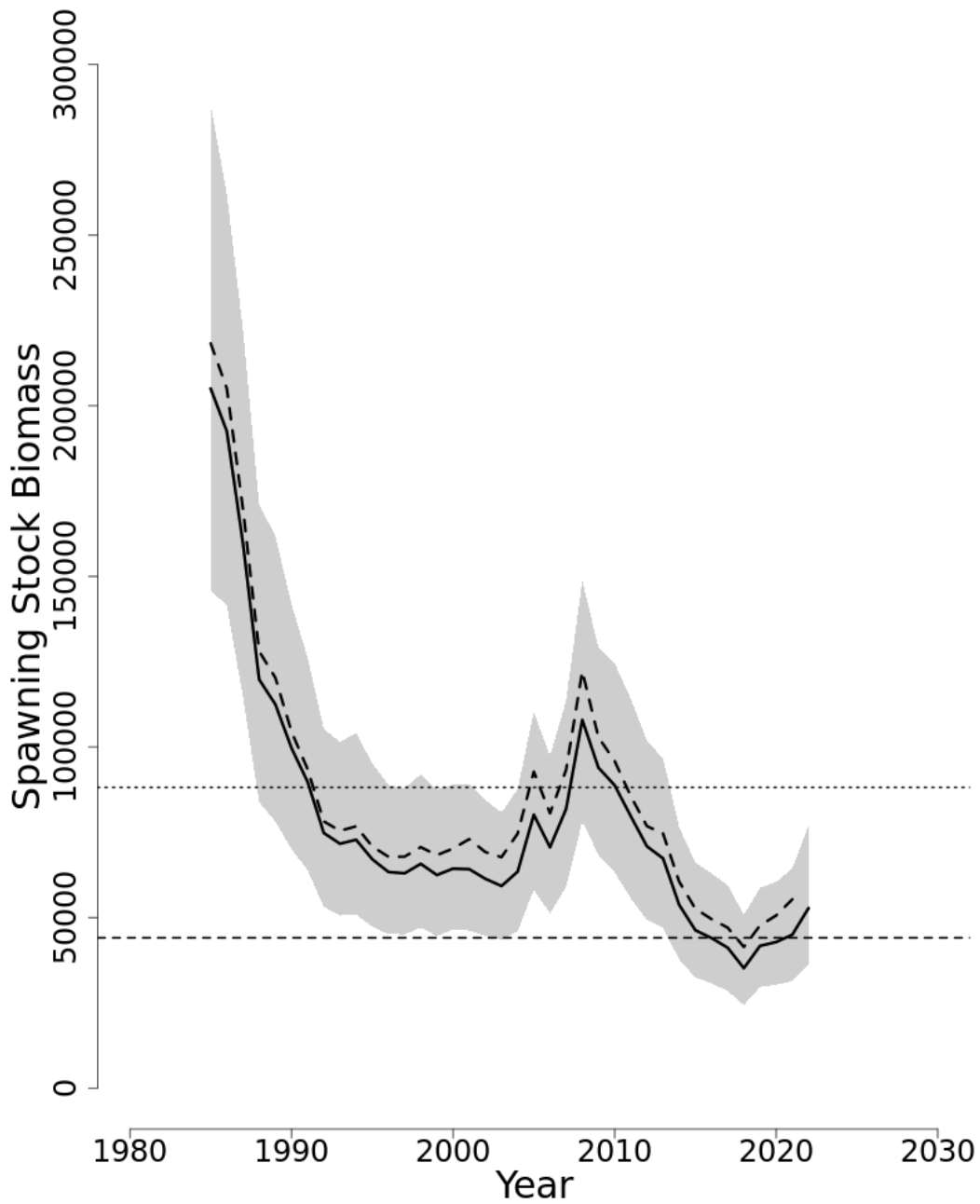


Figure 1: Trends in spawning stock biomass of Atlantic Bluefish between 1985 and 2022 from the current (solid line) and previous (dashed line) research track assessment and the corresponding $SSB_{Threshold}$ ($\frac{1}{2} SSB_{MSY}$ proxy; horizontal dashed line) as well as SSB_{Target} (SSB_{MSY} proxy; horizontal dotted line) based on the 2023 assessment. The approximate 90% lognormal confidence intervals are shown.

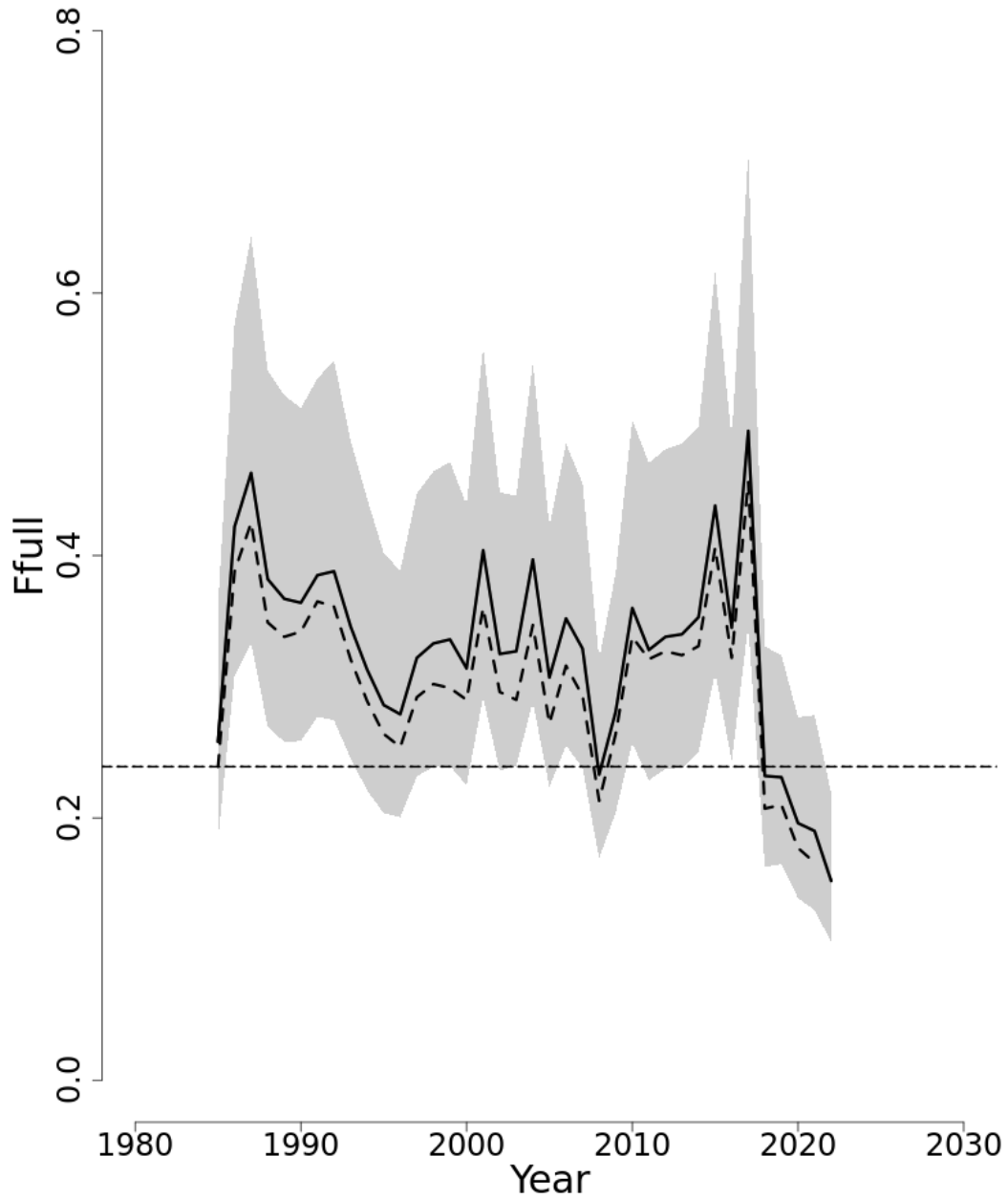


Figure 2: Trends in the fully selected fishing mortality (F_{Full}) of Atlantic Bluefish between 1985 and 2022 from the current (solid line) and previous (dashed line) research track assessment and the corresponding $F_{Threshold}$ (F_{MSY} proxy=0.239; horizontal dashed line). The approximate 90% lognormal confidence intervals are shown.

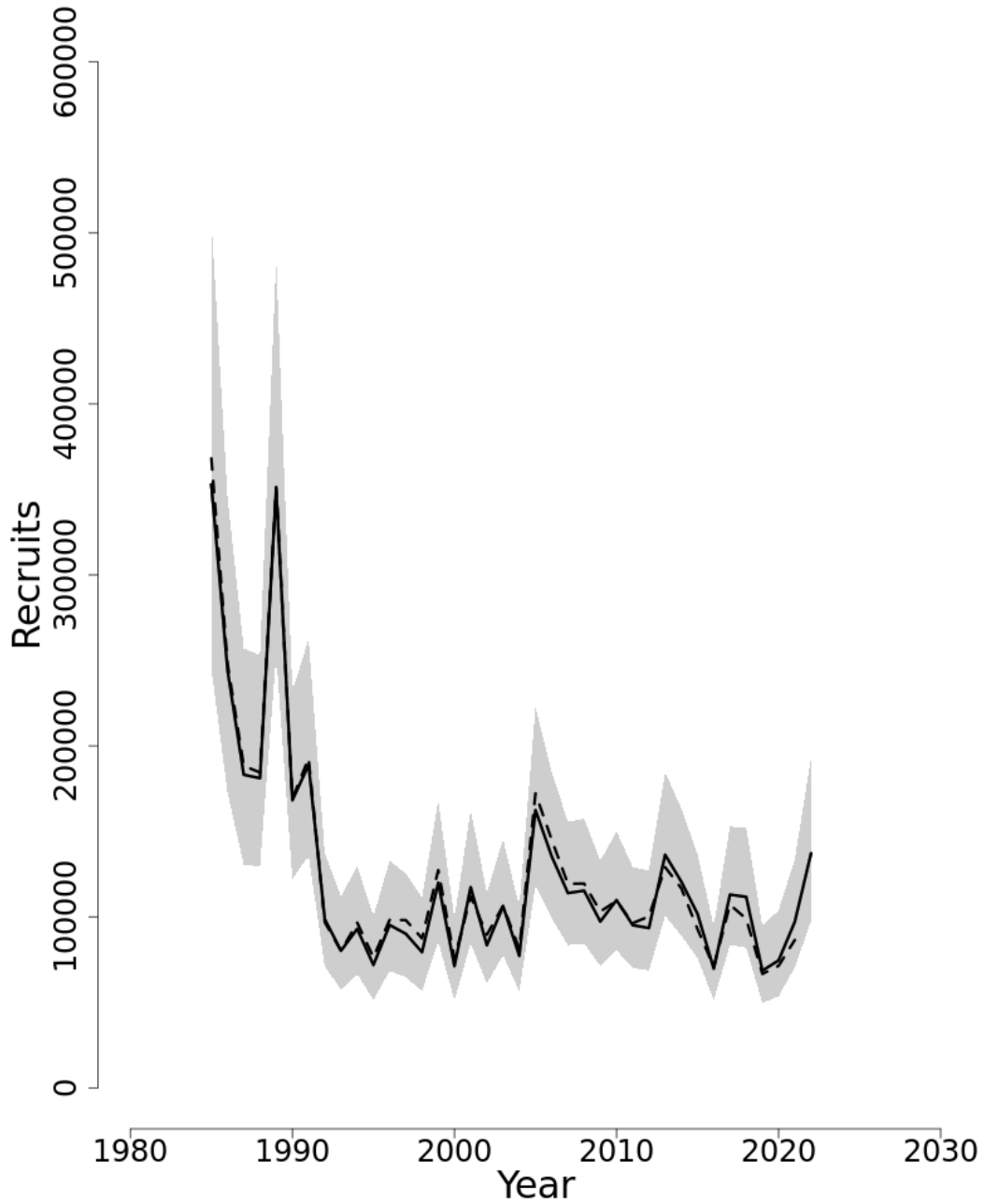


Figure 3: Trends in Recruits (age 0) (000s) of Atlantic Bluefish between 1985 and 2022 from the current (solid line) and previous (dashed line) research track assessment. The approximate 90% lognormal confidence intervals are shown.

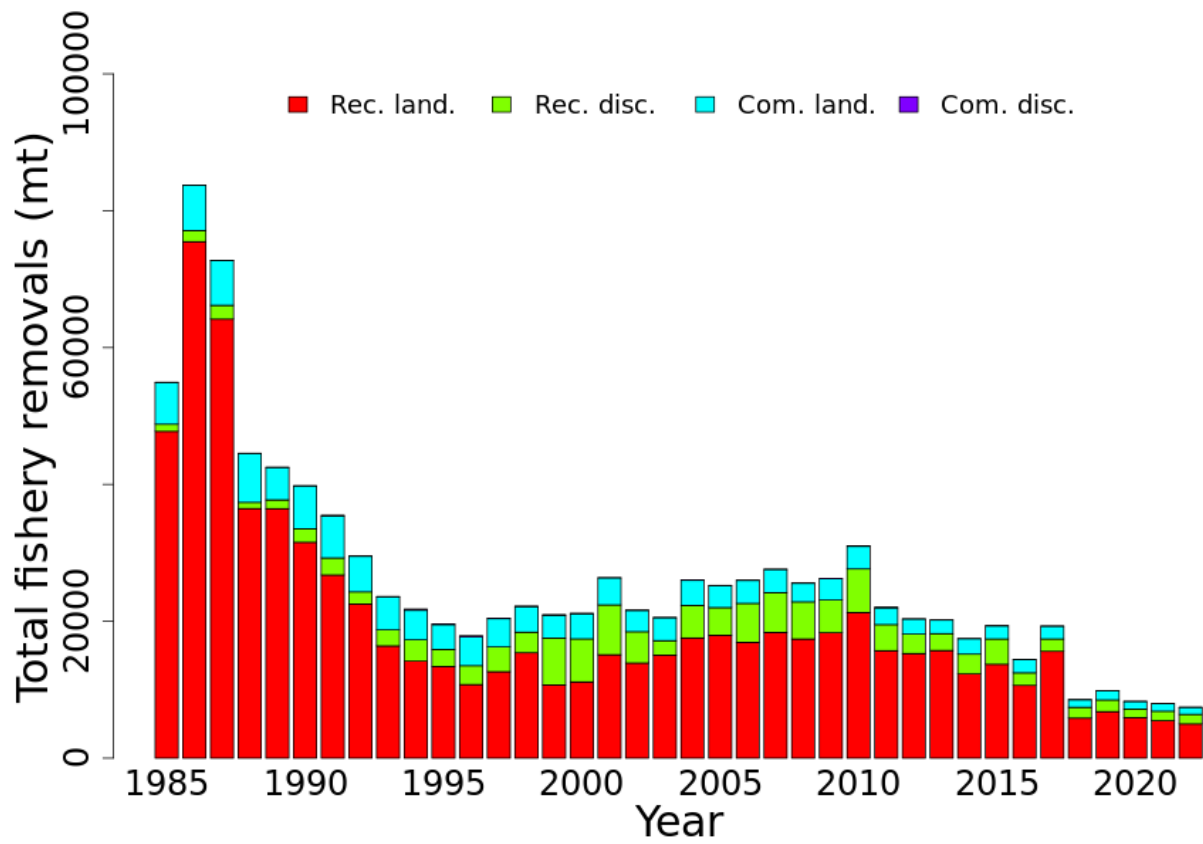


Figure 4: Total catch of Atlantic Bluefish between 1985 and 2022 by fleet (Recreational and Commercial) and disposition (landings and discards).

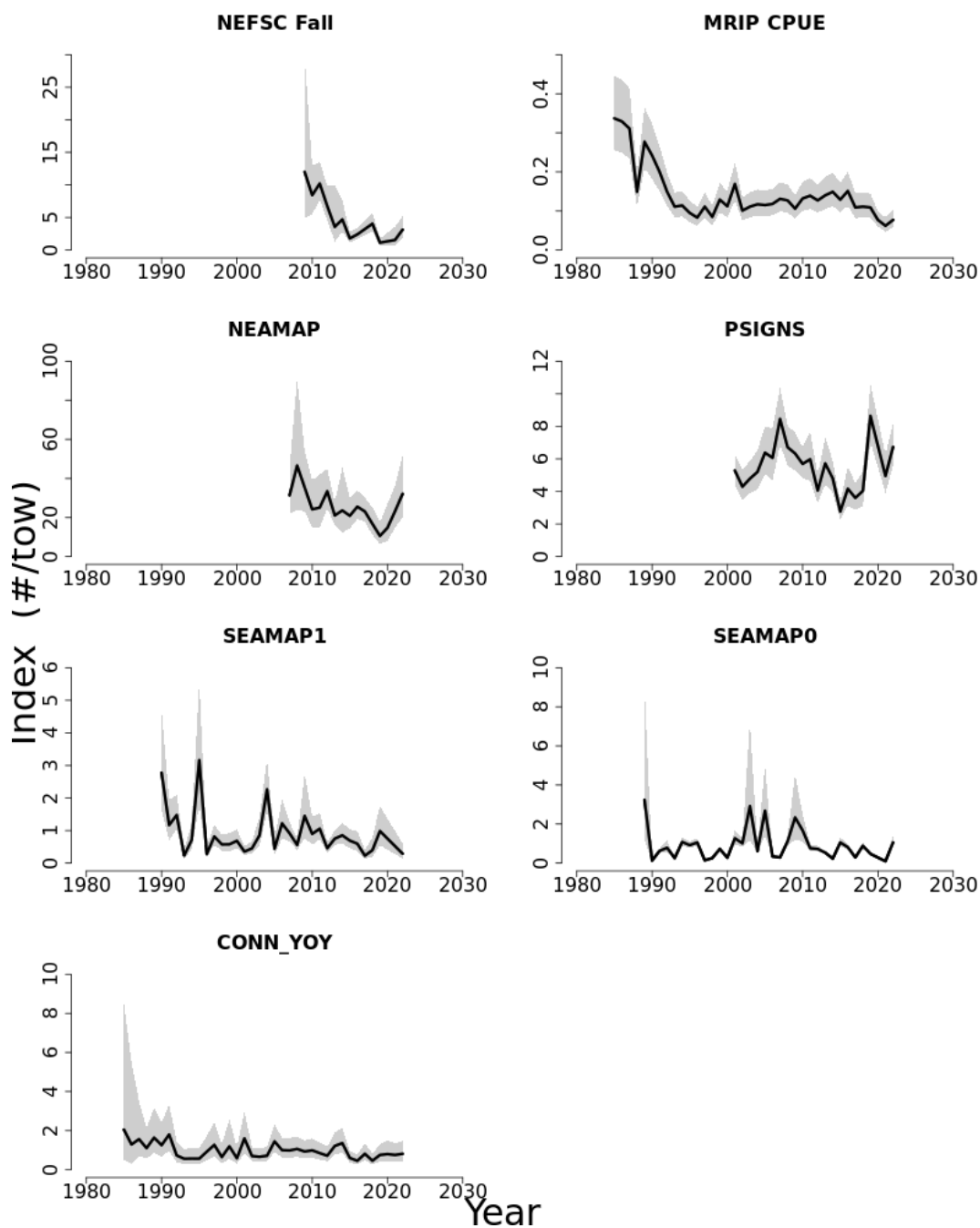


Figure 5: Atlantic Bluefish indices of abundance for the most important regional and state surveys. The approximate 90% lognormal confidence intervals are shown.



Bluefish Fishery Performance Report

June 2023

The Mid-Atlantic Fishery Management Council's (Council) and the Atlantic States Marine Fisheries Commission's (Commission) Bluefish Advisory Panels (AP) met via webinar on June 22, 2023 to review the Fishery Information Document and develop the following Fishery Performance Report. The primary purpose of this report is to contextualize catch histories by providing information about fishing effort, market trends, environmental changes, and other factors. A series of trigger questions listed below were posed to the AP to generate discussion of observations in the bluefish fishery. Please note: Advisor comments described below are not necessarily consensus or majority statements.

MAFMC Advisory Panel members present: Victor Hartley (NJ), Philip Simon (NJ), Willy Goldsmith (MA), James Kaczynski (RI), Thomas Roller (NC), Mike Wayne (NC), Steve Heins (NC), Steve Witthuhn (NY).

ASMFC Advisory Panel members present: Peter Fallon (ME), Frank Blount (RI), Gordon Churchill (NC), Ray Jarvis (MA).

Others present: Karson Cisneros (MAFMC Staff), Chelsea Tuohy (ASMFC Staff), Cynthia Jones (MAFMC SSC), Maureen Davidson (MAFMC), Wes Townsend (MAFMC), Chris Batsavage (MAFMC), Mike Celestino (NJ DEP), Alan Bianchi (NC DMF), Will Poston (ASGA), Haley Clinton, Andrew Scheld (MAFMC SSC), James Fletcher (UNFA), Greg DiDomenico (Lund's Fisheries), Jason Didden (MAFMC Staff)

Trigger questions

1. What factors have influenced recent catch (markets/economy, environment, regulations, other factors)?
2. Are the current fishery regulations appropriate? How could they be improved?
3. What would you recommend as research priorities?
4. What else is important for the Council to know?

Environmental Factors Influencing Catch

Advisors noted the variability in the average weight of fish landed by state, particularly the jump from 5 lbs in CT to 2 lbs in NY. One advisor did not feel this was realistic and wanted to compare this to an average weight of a commercially caught fish; however, commercial harvest data is not available in numbers of fish. Staff noted that this has been discussed in the past and lower average weights compared with what people are seeing out on the water may be due to the snapper fishery. Anglers will catch their bag limit of small fish from the dock with a very low

weight which is sampled by MRIP and brings down the average overall. Staff also noted that these state-by-state weights tend to fluctuate year to year.

Many advisors commented that there are much more bluefish this year than last year and noted an increasing trend in recent years. One advisor from NJ said that last year the bluefish were absent 10-15 miles offshore. Another advisor added that off of Montauk this year the bluefish fishing is phenomenal with a lot of large fish at sizes between 8-12 lbs. They added that they hoped these big fish will provide a good upcoming year class. Fishermen in RI and NC also observed that there have been a lot of bluefish this spring and summer.

An advisor in MA agreed that there have been a lot of really big fish in the area, more so in the past few years. They added that generally the big fish come in first to spawn and then move away but the size and number of fish are both impressive this year. In MA, there is a slot limit on striped bass, so the bluefish are filling a need where fish can be harvested. This advisor has a lot of clients that want to keep bluefish in recent years.

An advisor from NJ said that 2021 and 2022 were great bluefish years from Point Pleasant north into the southern end of New York. They added that the fish are about to 5-8 pounds. They are not seeing the little fish that are being accounted for by MRIP.

Market/Economic Conditions and Management Issues

One advisor noticed that the bag limit change in 2020 corresponds with a decrease in the proportion of overall catch by the shore mode and an increase in private rental mode, while the for-hire mode stayed at the same level. He wondered if this was because of more anglers in the private rental mode. Staff added that we do not have data on number of anglers, however another factor that could influence harvest by mode is bluefish availability from shore which advisors have commented on in the past. Another advisor added that boats will switch over to black sea bass until it is closed and then switch back to bluefish.

An advisor added that from their perspective, people tend to hire charter captains for summer flounder, striped bass, and black sea bass. Most people go after bluefish for fun but not to take them home to eat. They added that they didn't understand why changing the bag limit from 15 fish to 3 fish would have an impact.

A for-hire operator in NC observed that over the last 5-6 years there has been an increased interest in harvesting and eating bluefish. This species is filling the need for customers who want to go out and catch fish for dinner when other species' regulations don't allow it. This advisor did not think that the bag limit had a negative impact because people only want to take home 2 or 3 fish.

For the NJ and NY party boats, bluefish is an important fishery that brings in a lot of money. The head boats in the region want to see an increase in the bag limit because this helps the passengers come and there is a lot of availability of bluefish right now. Another advisor felt that the differing bag limits between the for-hire and private angler modes was not thoroughly analyzed before being implemented and should be pursued through sector separation.

One advisor noted that there is a lot of targeting and interest in bluefish but it is often not considered a bluefish directed trip, so bluefish as a secondary target in MRIP would also be important to look at. Another advisor added that in MA, if you interviewed customers, they would not say they were targeting bluefish, but they catch bluefish on at least 50% of the trips and on some trips, a lot of bluefish are caught.

A member of the public commented that the people that can afford private boats and come back to private docks are not having their catch reported. They added that 80% of the people that are fishing come back to non-surveyed dock areas. They also felt that anglers fishing from shore should be allowed to keep more fish while those that can afford boats should have a lower limit because they are fishing for fun.

Another member of the public asked about the number of for-hire vessels in MA that target or fish for bluefish. Staff responded that they did not have the number of for-hire vessels broken down by state. An advisor added that there is a large percentage of for-hire vessels in MA that don't have federal permits.

Three advisors said they would like to see continued support for the conservation of bluefish and did not think there was a need to increase the bag limit too soon. One added that as a guide, bluefish are very valuable and you can always rely on them. They did not want to see a similar situation to what happened with striped bass in the early 2000s. They added that ensuring that there are still fish in 10-15 years is more important to them than taking home more fish.

Research Priorities and Data Issues

Advisors discussed the discard mortality rate change in the research track assessment. One advisor asked whether the updated rate of 9.4% (previously 15%) was the result of a specific study and whether there is a difference between the discard mortality rate by fish size. Staff responded that the rate was updated based on an analysis of the literature and updated information since the benchmark assessment in 2015 when the 15% rate was used; however, the rate is not size specific.

Another advisor commented that people that work in the aquarium system in NC have noted that bluefish have a high mortality rate when they are handled so it would be valuable to have bluefish-specific discard studies, not studies based on other species. Another advisor agreed with the recommendation for a bluefish post release mortality study, and added that analyzing mortality on the early fish that are larger and later fish that are smaller would be helpful. Another advisor agreed with the need for a species-specific post-release mortality study and felt it was still a concern.

One advisor felt that since the research track stock assessment already evaluated the discard mortality rate, this should be a lower research priority compared with the need to get better data on the larger older bluefish that tend to be offshore. They are inshore now but we don't know where they came from or where they were in past years. Another advisor commented that they have known for years that there are bigger fish offshore just farther from where people want to fish from but we don't know why they are coming in now. They observed that there are a lot of

bunker and that the bluefish run with the striped bass.

An advisor commented that if the stock assessment isn't taking into account commercial bluefish discards in the NC shrimp trawl fishery then that should be another research recommendation. A member of the public disagreed and stated that there is no bycatch of bluefish in the shrimp trawl fishery because they are too fast for the trawl net.

Both an advisor and a member of the public asked about the updated bluefish reference points from the recent research track assessment. The advisor was surprised that there wasn't more discussion of the scaling down in biomass from the 2019 management track assessment to the 2022 research track assessment. The member of the public asked whether the SSC commented on this change in their May 2023 discussion on the research track assessment. Staff responded that they did discuss the changes and noted that the most recent reference points are similar to those from the 2015 benchmark assessment. The May SSC meeting summary can be found [here](#).

One advisor suggested bioeconomic models for bluefish similar to what has been done for summer flounder, scup and black sea bass.

Other issues

Advisors discussed the timing of this meeting and a future AP meeting in late July or early August to recommend recreational management measures. One advisor noted that this time of year is challenging to meet and suggested the Fishery Performance Report meeting should be farther apart from the summer flounder, scup, and black sea bass meeting, which was held the previous day. One advisor was grateful for the meeting start time of 4:00 pm and said the evening was helpful. Advisors generally preferred a second AP meeting in late July or early August rather than soliciting feedback on 2024-2025 measures via email or some other format. This discussion was raised due to the difficult time of year and advisors' busy schedules on the water.

Advisor Comments Received Via Phone or Email

Email: TJ Karboski

From: Capt. TJ Karbowski <tedkarbowski@yahoo.com>
Sent: Friday, June 16, 2023 4:34 AM
To: Cisneros, Karson <KCisneros@mafmc.org>
Subject: Re: June 22 Bluefish AP Meeting

Good morning. Unless there is a weather event I will be on the water fishing. I'm a charter boat Captain. 4:00 in the middle of the season is an unrealistic time for a meeting for people who work on the water. These meetings should be during the winter. That being said, the bluefish are thriving this year. Although the general public and charter customers typically don't keep them for the table, the amount of fish around is (old school) and the fishing is as good as it gets. And, the fish range in sizes from little harbor size all the way up to true "alligators". Many year classes have succeeded.

Thank you, Capt. TJ Karbowski

Phone Call: Steve Witthuhn

- The 2 lb average weight for NY is because snappers are diluting the average weights and snappers should be considered as a completely different category. Otherwise, it is misrepresenting the fishery. The average weight jumps around with neighboring states. These values are not reasonable.
- Fish are now 9-12 lbs off of Montauk and are up to 7 lbs in MA
- Where were these large fish hiding in past years, were these the fish from a strong year class several years ago? We are inundated with bluefish. Do we know how big a 10 year old fish is?
- CT and the north shore of Long Island should be its own region where the bag/size/season regulations need to stay the same for all recreational species.
- Next year we should see a good snapper year with all of these larger fish spawning
- Bluefish school together by size, you don't see small fish in a school with the larger fish
- Bluefish are feeding like crazy on the sand eels to the point that they are not paying attention to a hooked porgy, when they used to attack those.

Phone Call: Bill Mandulak

- Bluefish haven't been around in the Outer Banks area where in the past you'd catch a lot of them. Specifically in areas such as Hatteras and Cape Point. They seem to be patchy, we do hear reports of them but in my experience this year and last May, even the small ones weren't there.
- The MRIP landings in NC from last year are substantial which is surprising and doesn't jive with what we are seeing.



Bluefish Fishery Information Document

June 2023

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for bluefish with an emphasis on 2022. Data sources for Fishery Information Documents are generally from unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and should be considered preliminary. For more resources, including previous Fishery Information Documents, please visit <http://www.mafmc.org/bluefish/>.

Key Facts

- The bluefish stock entered a rebuilding plan in 2022 to rebuild the stock. The 2023 Management Track Assessment will use data through 2022 and provide updated stock status and biological reference points to be used for management in 2024-2025.
- Recreational landings were 11.35 million pounds in 2022, a 1.11 million pound decrease compared with 2021.
- In 2022, 80% of recreational bluefish catch was released while 20% was harvested, with the majority of harvest occurring from the shore mode and in state waters.
- Commercial landings were 2.14 million pounds in 2022, a 0.07 million pound increase compared with 2021.

Basic Biology

Bluefish are found worldwide in tropical and subtropical waters, but in the western North Atlantic range from Nova Scotia and Bermuda to Argentina. Bluefish travel in schools of like-sized individuals and undertake seasonal migrations, moving into the Middle Atlantic Bight (MAB) during spring and then south or farther offshore during fall. Within the MAB they occur in large bays and estuaries as well as across the entire continental shelf. Juvenile stages have been recorded in all estuaries within the MAB, but eggs and larvae occur in oceanic waters (Able and Fahay 1998). Bluefish have fast growth rates and reach lengths of 3.5 ft and can weigh up to 27 pounds (Bigelow and Schroeder 1953). Bluefish live to age 12 and greater (Salerno et al. 2001).

Bluefish eat a wide variety of prey items. The species has been described by Bigelow and Schroeder (1953) as “perhaps the most ferocious and bloodthirsty fish in the sea, leaving in its

wake a trail of dead and mangled mackerel, menhaden, herring, alewives, and other species on which it preys."

Bluefish born in a given year (young of the year) typically fall into two distinct size classes suggesting that there are two spawning events along the east coast. Studies suggest, however, that spawning is a single, continuous event, but that young are lost from the middle portion resulting in the appearance of a split season (Smith et al. 1994). As a result of the bimodal size distribution, young are referred to as spring-spawned or summer-spawned. In the MAB, spring-spawned bluefish appear to be the dominant component of the stock.

Status of the Stock

2021 Management Track Assessment

In June 2021, a bluefish management track assessment, which included revised bluefish MRIP estimates and commercial landings through 2019 indicated the bluefish stock is still overfished and overfishing is not occurring. This update builds upon the 2019 operational assessment with data through 2018 that first indicated the stock was overfished and overfishing was not occurring. This assessment has been used for management for 2022-2023.

2022 Research Track Assessment and 2023 Management Track Assessment

A bluefish research track stock assessment underwent peer review in December 2022. This research track assessment evaluated new datasets and model changes to develop an improved stock assessment for bluefish. This assessment will serve as the basis for a 2023 management track assessment. The 2023 management track assessment (MTA) will use data through 2022 and provide updated stock status and biological reference points to be used for management in 2024-2025. This management track assessment will undergo peer review June 26-28 and more information will be posted to [this NOAA Fisheries Assessment Site](#) as it becomes available.

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council or MAFMC) and the Atlantic States Marine Fisheries Commission (ASMFC) work cooperatively to develop fishery regulations for bluefish off the east coast of the United States. The Council and Commission work in conjunction with the National Marine Fisheries Service (NMFS), which serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch is taken from both state waters (0-3 miles offshore) and federal waters (3-200 miles offshore, also known as the Exclusive Economic Zone or EEZ). The management unit for bluefish is the U.S. waters in the western Atlantic Ocean.

The Bluefish Fishery Management Plan (FMP) was implemented in 1990 and established the Mid-Atlantic Fishery Management Council's management authority over the fishery in federal waters. Amendment 1, implemented in 2000, addressed stock rebuilding and created the Bluefish

Monitoring Committee which meets annually to make management measure recommendations to the Council. Amendment 3 incorporated the development of annual catch limits (ACLs) and accountability measures (AMs) into the specification process and Amendment 4 modified recreational accountability measures to accommodate uncertainty in recreational management and catch estimation. The original FMP and subsequent amendments and frameworks are available at: <http://www.mafmc.org/fisheries/fmp/bluefish>.

Until 2022, the annual catch limit was split 83 percent and 17 percent into recreational and commercial limits, respectively, and the discarded component of that catch was deducted to arrive at recreational and commercial total allowable landings (TAL). Additionally, landings above the expected recreational harvest could be “transferred” from the recreational to the commercial fishery as long as the final commercial quota did not exceed 10.5 million pounds. In June 2021, the Council and ASMFC’s Bluefish Board took final action on the Bluefish Allocation and Rebuilding Amendment. This action allocates 14 percent of the fishery annual catch limit to the commercial fishery and 86 percent to the recreational fishery, which is a 3-percentage point shift to the recreational sector from the prior allocations. This amendment also adjusted the commercial state quota allocations and allows bi-directional quota transfers. Amendment documentation is available at: <https://www.mafmc.org/actions/bluefish-allocation-amendment>.

The Council's SSC reviews stock assessment results and the Advisory Panel’s fishery performance report and sets the ABCs on a two year cycle with a review occurring between those two years. The Council's Bluefish Monitoring Committee develops and recommends specific coastwide management measures (commercial quota, recreational harvest limit) that will achieve the catch target and makes further adjustments to total catch as needed based on management uncertainty. Finally, the Council and Board meet jointly to develop recommendations to be submitted to the NMFS.

Table 1. Summary of bluefish catch, harvest, and management measures, 2014 – 2023 (Values are in millions of pounds). In 2019, recreational landings were provided using new MRIP estimates while the RHL was developed using old MRIP estimates so cannot be directly compared.

Management Measures	2014	2015	2016	2017	2018	2019	2020	2021	2022²	2023
ABC	24.43	21.54	19.45	20.64	21.81	21.81	16.28	16.28	25.26	30.62
TAL	21.08	18.19	16.46	18.19	18.82	19.33	12.25	12.25	17.43	18.40
Comm. Quota	7.46	5.24	4.88	8.54	7.24	7.71	2.77	2.77	3.54	4.29
Comm. Landings	4.77	4.02	4.1	3.64	2.20	2.78	2.16	2.07	2.14	--
Rec. Harvest Limit	13.62	12.95	11.58	9.65	11.58	11.62	9.48	8.34	13.89	14.11
Rec. Harvest, Old MRIP	10.46	11.67	9.54	9.52	3.64	--	--	--	--	--
Rec. Harvest, New MRIP	27.04	30.10	24.16	32.07	13.27	15.56	13.58	12.46	11.35	--
Rec. Possession Limit (# fish)	15	15	15	15	15	15	3: Private 5: For-Hire	3: Private 5: For-Hire	3: Private 5: For-Hire	3: Private 5: For-Hire
Total Landings	15.23	15.69	13.64	13.16	5.84	18.34	15.74	14.53	13.49	--
Overage/Underage	-5.85	-2.5	-2.82	-5.03	-12.98	N/A	+3.49	+2.28	-3.94	--
Total Catch ¹	17.96	18.65	16.09	15.65	6.96	23.50	19.93	21.25	17.85	--
Overage/Underage	-6.47	-2.89	-3.36	-4.99	-14.85	N/A	+3.65	+4.97	-7.41	--

¹ Recreational discards were calculated assuming MRIP mean weight of fish harvested in a given year multiplied by the MRIP B2s and the assumed discard mortality rate from the stock assessment (15% through 2021, 9.4% starting in 2022). ²Catch and landings values are preliminary and are not the final values to be used for catch accounting. Estimates from the 2023 Management Track Assessment will be used once available.

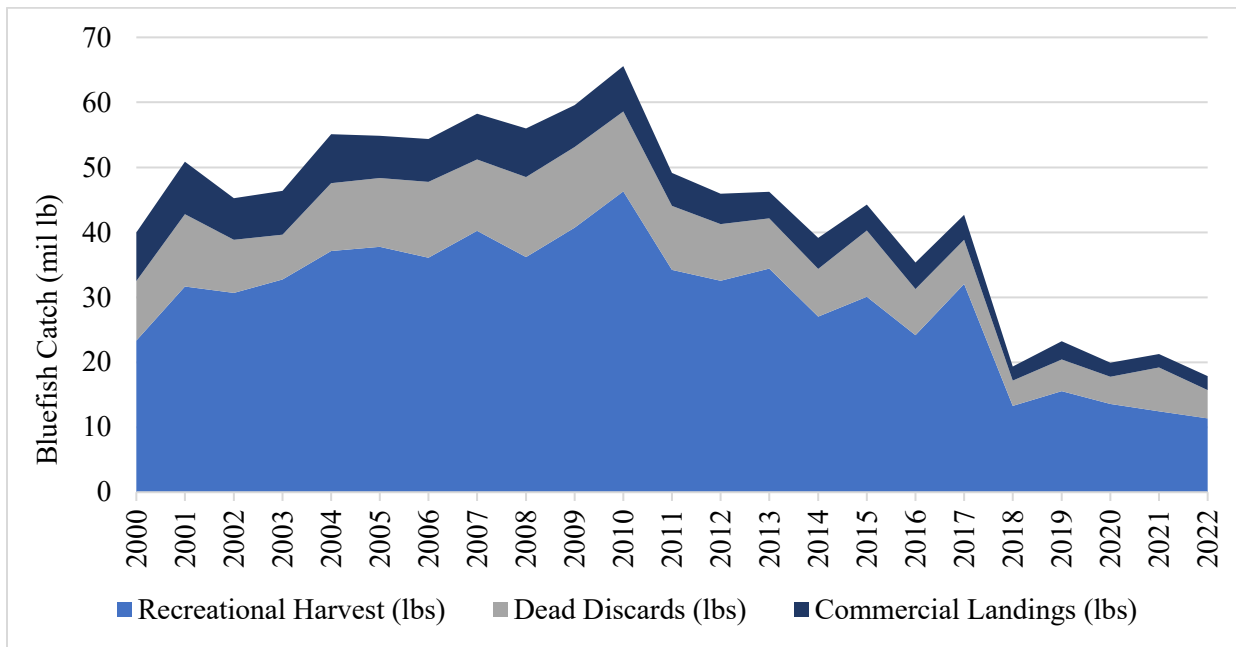


Figure 2. Bluefish catch (landings and dead discards), 2000-2022. Recreational dead discards are calculated as the average weight of a harvested fish by year and state multiplied by the B2s and 15% (2000-2021) or 9.4% (2022) discard mortality rate (Source: MRIP and Dealer data – cfders). Commercial discards are thought to be negligible. The full time series will be updated to account for commercial discards and updated discard mortality rates after the 2023 MTA.

Fishery Performance Relative to Management Measures

The recreational and commercial landings relative to specified management measures through 2023 are provided in Table 1. In 2022, the recreational fishery landed 11.35 million pounds compared to the 13.89 million pounds RHL and the commercial fishery landed 2.14 million pounds compared to the 3.54-million-pound quota.

Recreational Fishery

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). The revised estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes. All recreational estimates in this document reflect revised MRIP estimates except where otherwise noted. Recreational harvest estimates for 2020 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.

Trends in recreational trips associated with targeting or harvesting bluefish from 2013 to 2022 are provided in Table 2. During the past ten years, the lowest annual estimate of bluefish trips was 6.32 million (2022) and the highest annual estimate of bluefish trips was 12.82 million in

2012. Over the last 5 years (2017-2021), the number of bluefish trips averaged 7.57 million trips and the number of trips has been decreasing in recent years.

Table 2. Number of bluefish recreational fishing trips, landings per trip, harvest, catch and releases for the past 10 years, ME-FL.

Year	bluefish trips ¹ (N)	Landings per trip	Rec. Harvest (N)	Rec. Harvest (lbs)	Released (N)	Catch (N)
2013	9,353,805	2.14	19,975,051	34,398,327	33,519,613	53,494,664
2014	12,441,771	1.73	21,510,651	27,044,276	33,583,115	55,093,766
2015	9,406,704	1.46	13,725,106	30,098,649	28,423,854	42,148,960
2016	10,626,957	1.4	14,899,723	24,155,304	27,629,023	42,528,746
2017	9,952,090	1.39	13,845,806	32,071,432	28,317,327	42,163,133
2018	7,169,536	1.43	10,245,710	13,270,862	20,682,992	30,928,703
2019	8,250,853	1.47	12,137,290	15,555,889	26,494,646	38,631,936
2020	8,745,993	1.07	9,336,222	13,581,218	21,345,604	30,681,826
2021	7,409,375	0.83	6,183,783	12,462,781	23,566,217	29,750,000
2022	6,324,069	1.00	6,353,081	11,354,535	25,930,541	32,283,622

¹ Estimated number of recreational fishing trips where the primary target was bluefish or bluefish were harvested regardless of target

From the early 1980s to the early 1990s, recreational harvest declined about 70% (avg. 1981-1983 = 156.34 million pounds; avg. 1991-1993 = 46.14 million pounds). Recreational harvest continued to decline at a slower rate until reaching a low level in 1999-2000 but then grew to a peak of over 46 million pounds in 2010. Since 2018, recreational harvest dropped to the lowest values of the time series with a 2018-2022 average harvest of 13.25 million pounds. In 2022, landings were 11.35 million pounds. From 2000 to 2010 landings were relatively stable, however, recreational landings have been trending downward since 2010 (Figure 2).

Recreational catch and harvest estimates by state for 2022 are provided in Table 3. The greatest catches (harvest plus discards) occurred in North Carolina with 9.73 million fish, followed by New York with 7.14 million fish, and Florida and South Carolina with over 3 million fish.

The greatest harvest of bluefish by weight in 2022 occurred in New York with 3.45 million pounds, followed by Florida with 1.96 million pounds, and North Carolina, Massachusetts, and New Jersey with a little over 1 million pounds harvested. Average weights landed, based on dividing MRIP landings in weight by landings in number for each state, suggest that bluefish size tends to increase along the north Atlantic coast. In 2022, 80% of recreational bluefish catch was released while 20% was harvested, however this varied by state (Figure 3).

Table 3. MRIP estimates of 2022 bluefish recreational harvest, total catch, and average weight.

State	Harvest			Catch	Total Released	Dead Discards
	Pounds	Number	Average Weight ¹ (pounds)	Number	Number	Number
ME	73,697	8,326	8.9	31,061	22,735	2,137
NH	1,598	181	8.8	1,397	1,216	114
MA	1,277,203	183,470	7.0	1,533,782	1,350,312	126,929
RI	593,444	92,704	6.4	341,709	249,005	23,406
CT	541,930	105,910	5.1	715,327	609,417	57,285
NY	3,446,600	1,710,502	2.0	7,144,950	5,434,448	510,838
NJ	1,077,834	510,820	2.1	1,728,918	1,218,098	114,501
DE	51,550	38,676	1.3	548,873	510,197	47,959
MD	213,345	249,382	0.9	484,947	235,565	22,143
VA	215,999	262,360	0.8	1,534,477	1,272,117	119,579
NC	1,336,592	1,533,911	0.9	9,731,098	8,197,187	770,536
SC	259,372	487,654	0.5	3,194,059	2,706,405	254,402
GA	35,911	43,335	0.8	317,567	274,232	25,778
FL	1,957,211	1,125,847	1.7	3,768,905	2,643,058	248,447
Total	11,354,535	6,353,078	1.8	31,077,070	24,723,992	2,324,055

¹ Average weight is the pounds harvested divided by the number of fish harvested. Recreational dead discards in numbers of fish were calculated as 9.4% of total recreational discards.

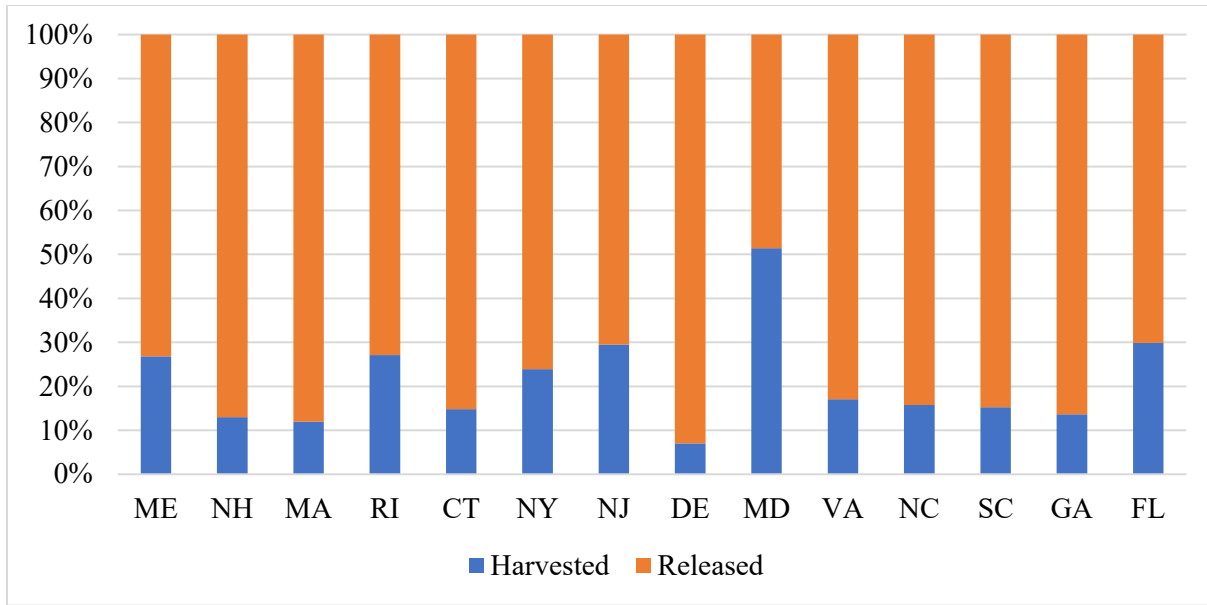


Figure 3. Proportion of bluefish recreational catch that was harvested and released by state in 2022 (in numbers of fish). Source: MRIP.

Figure 4 presents new MRIP estimates of landings by mode since 2002 and indicates that the recent primary modes landing bluefish are shore mode and private boats. Based on recreational harvest in 2022, landings from shore represented 55% of overall landings, followed by private rental mode at 41% and the for-hire sector at 5%. Over the last five years (2018-2022), ~65% of the total bluefish landings came from shore, ~31% from private/rental boats, and ~4% from for-hire boats. In 2022, 988 federal for-hire permits were issued for bluefish.

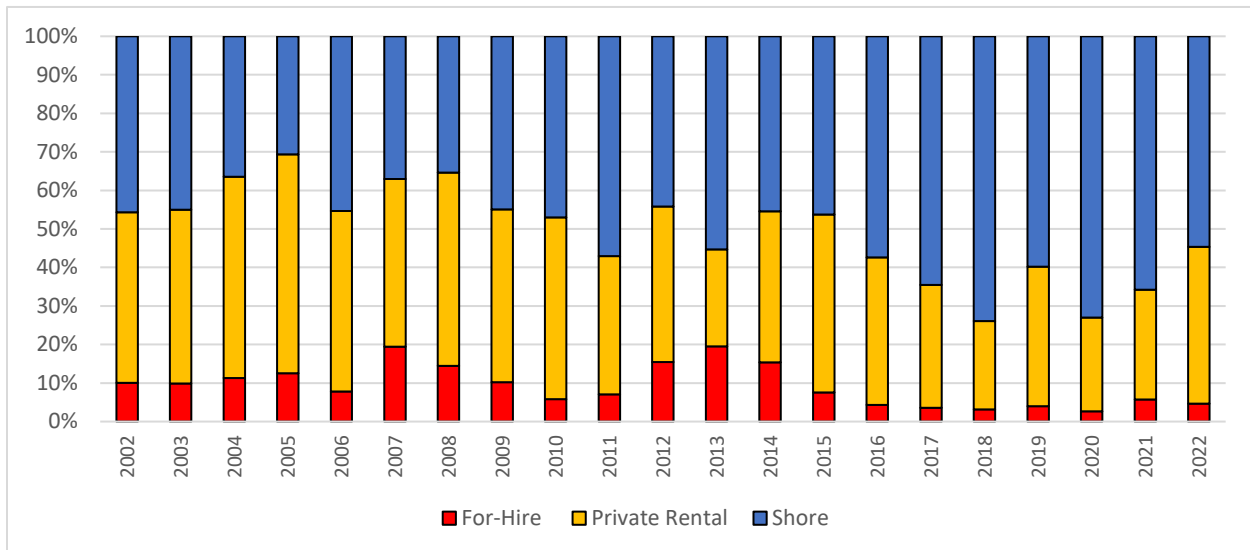


Figure 4. Bluefish recreational harvest (pounds) by mode on the Atlantic Coast, 2002-2022. Source: MRIP.

MRIP classifies catch into three fishing areas: inland, nearshore ocean (< 3 mi), and offshore ocean (> 3 mi). In 2022, the majority of coastwide bluefish harvest occurred in inland waters at 55%, followed by 40% from nearshore ocean, and 4% from offshore waters. Inland and nearshore ocean are considered state waters while offshore ocean (>3 miles) is federal waters, therefore 96% of bluefish harvest by weight occurred in state waters in 2022.

Commercial Fishery

Federal permit data indicate that 2,324 commercial bluefish permits were issued in 2022. A subset of federally permitted vessels was active in 2022 with dealer reports identifying 380 vessels with commercial bluefish permits that landed bluefish. Of the 165 federally permitted bluefish dealers in 2022, there were 137 dealers who bought bluefish.

In 2022, the commercial fishery landed 2.14 million pounds. Dealer data for 2022 indicate that most of the bluefish commercial landings were taken by gillnet (47%), trawl/dredge (44%), handline (6%), and other (3%).

Across states, 2022 commercial landings were the highest in North Carolina with 0.74 million pounds of bluefish landed, followed by New York at 0.37 million pounds and Massachusetts at 0.25 million pounds (Table 4). VTR catch data was used to identify all NMFS statistical areas that accounted for at least 5 percent of the total bluefish catch (Table 5). Seven statistical areas accounted for approximately 81% of the VTR-reported catch in 2022. The highest percentage of catch was from statistical area 612 with the most trips targeting bluefish conducted in statistical area 539. A map of the proportion of bluefish catch by statistical area based on federal VTR data is shown in Figure 5.

Table 4. Commercial landings by state for 2022 based on dealer data (cfders). Note that state only commercial landings from North Carolina and Florida are not always present in the cfders database. Final commercial catch accounting will be made available by GARFO prior to setting specifications.

State	2022 Landings (Pounds)
ME	C
NH	0
MA	254,138
RI	240,460
CT	41,597
NY	368,473
NJ	203,595
DE	6,716
MD	10,059
VA	187,526
NC	736,595
SC	0
GA	0
FL	93,018
Total	2,142,304

Table 5. Statistical areas that accounted for at least 5 percent of the total bluefish catch. Source: VTR database.

Statistical Area	Catch (lbs)	Percent of total catch	Number of trips
612	104,767	18%	218
613	82,719	14%	484
626	76,973	13%	28
539	64,511	11%	528
537	53,608	9%	369
635	48,929	9%	204
611	30,661	5%	463

2022 Commercial Bluefish Catch - VTRs

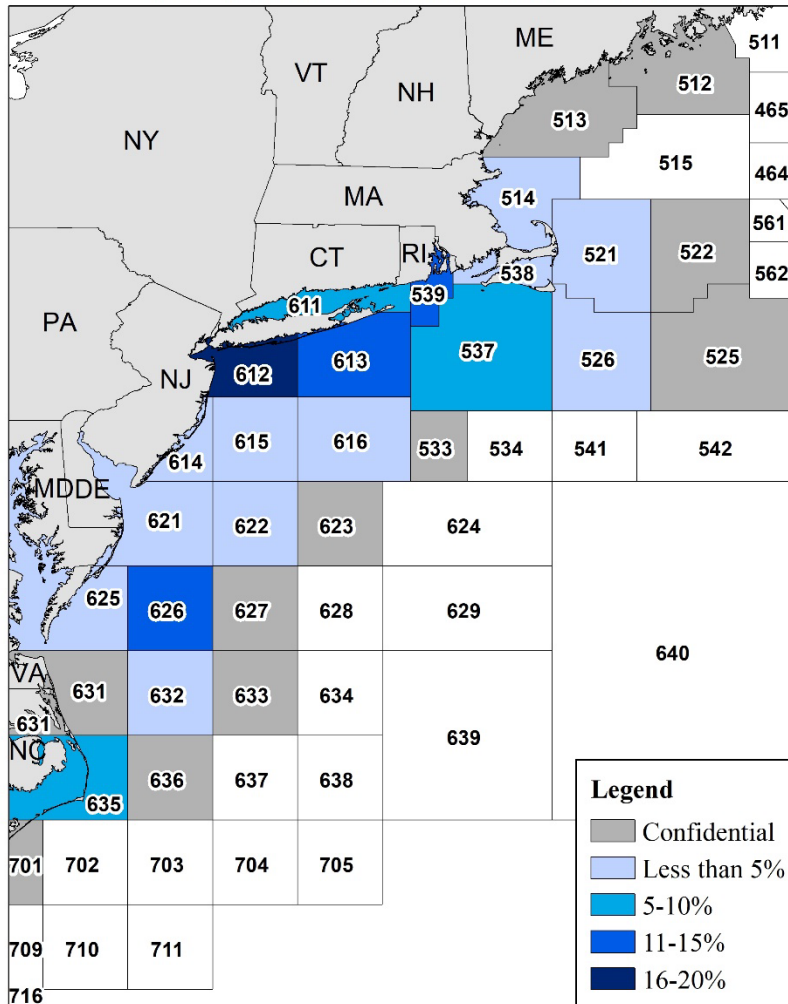


Figure 5. Proportion of bluefish catch by NMFS Statistical Area in 2022 based on federal VTR data. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

The top commercial landings ports for bluefish in 2022 are shown in Table 6. Five ports qualified as "top bluefish ports," i.e., those ports where 100,000 pounds or more of bluefish were landed. Hatteras, NC landed the most commercial bluefish with 273,871 pounds landed. The ports and communities that are dependent on bluefish are described in Amendment 1 to the FMP (available at <http://www.mafmc.org/fisheries/fmp/bluefish>). Additional information on "Community Profiles for the Northeast US Fisheries" can be found at http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

According to dealer data, commercial vessels landed about 2.14 million pounds of bluefish valued at approximately \$1.87 million in 2022. Average coastwide ex-vessel price of bluefish was \$0.87 per pound in 2021, a \$0.07 decrease from the previous year (2021 price = \$0.94 per pound). A time series of bluefish revenue and price is provided in Figure 6.

Table 6. Bluefish landings in pounds for top ports (landings > 100,000 pounds) based on NMFS 2022 dealer data (cfdrs).

Port	Pounds	% of total commercial landings	# vessels
Hatteras, NC	273,871	13%	<10
Wanchese, NC	264,359	12%	12
Point Judith, RI	175,841	8%	93
Montauk, NY	160,317	7%	71
Provincetown, MA	100,299	5%	<10

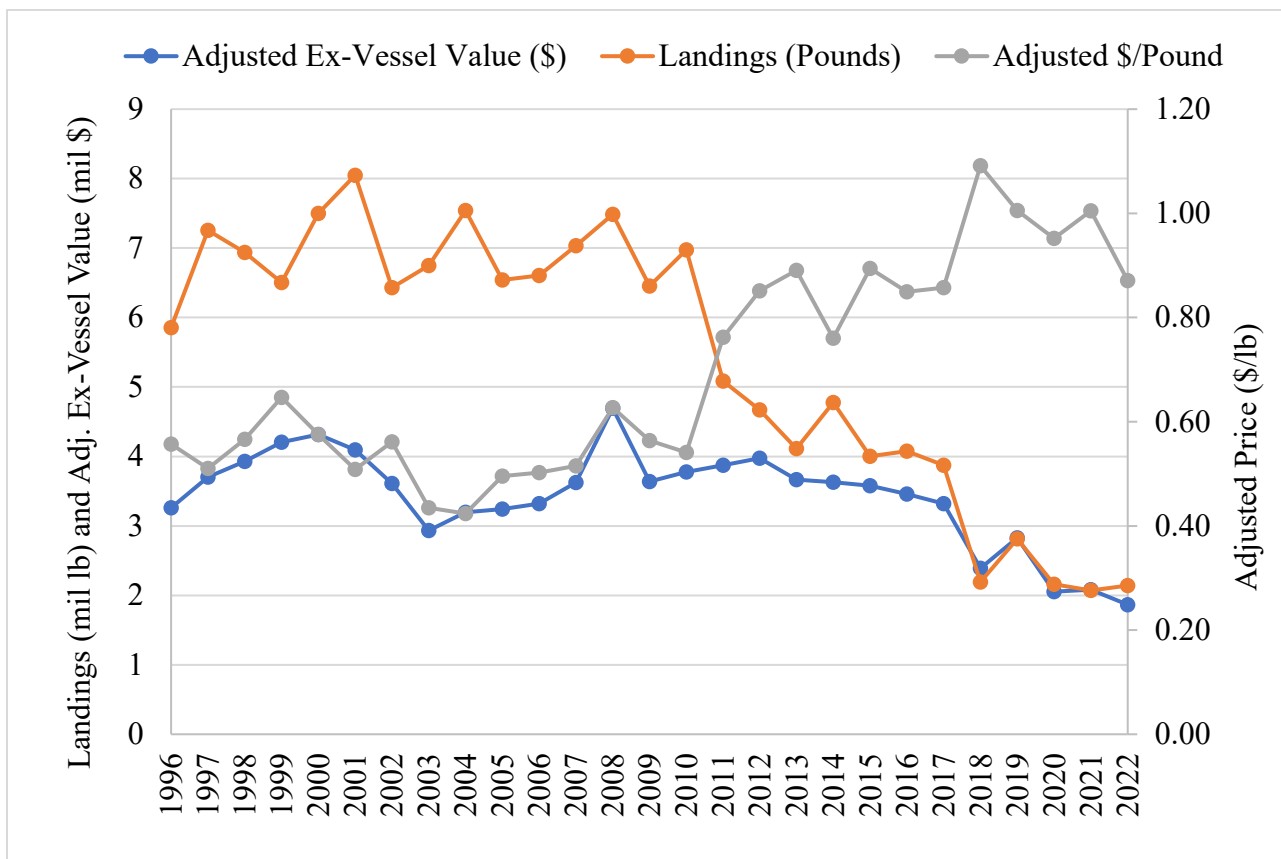


Figure 6. Bluefish commercial landings (in millions of pounds), ex-vessel value, and price per pound (adjusted to 2022 real dollars) from 1996-2022.

Bycatch species caught on bluefish targeted trips based on observer data are shown in Table 7. The commercial bluefish fishery is primarily prosecuted with gillnets and handlines, although there are other small localized fisheries, such as the beach seine fishery that operates along the Outer Banks of North Carolina. Many of these fisheries do not fish exclusively for bluefish, but target a combination of species including croaker, mullet, Spanish mackerel, spot, striped bass, and weakfish. Given the mixed-species nature of the bluefish fishery, incidental catch of non-target species is not directly attributable to the bluefish fishery.

Table 7. Percent of top commercial non-target species caught (kept or discarded) by weight on observed trips where bluefish was either target species 1 or 2 from 2018-2022. Source: Observer data retrieved April 2022.

Species	% by weight
Smooth dogfish	10%
Scup	4%
Striped bass	3%
Spiny dogfish	2%
Atlantic bonito	2%
Black sea bass	1%

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MEMORANDUM

Date: July 28, 2023
To: Chris Moore, Executive Director
From: Kiley Dancy, Staff
Subject: East Coast Climate Change Scenario Planning Update: Process Outcomes, Next Steps, and Staff Recommendations for Mid-Atlantic Council Priorities

On Wednesday, August 9, the Council will discuss the East Coast Climate Change Scenario Planning initiative. This memo provides an overview of recent activities of the initiative and discusses staff recommendations for next steps for the Mid-Atlantic Council. In addition, this briefing tab includes two documents that summarize the main themes and potential actions that emerged through the scenario planning process:

1. The final [report of the East Coast Scenario Planning Summit Meeting](#) held in February 2023. The goal of the Summit was to develop a set of potential governance and management actions resulting from a scenario-based exploration of the future. The Summit report provides a comprehensive summary of discussion themes, outcomes, and “potential actions” identified by summit participants.
2. The [Potential Action Menu](#). The Potential Action Menu expands on, clarifies, and prioritizes the potential governance and management actions identified during the summit. This document is intended to be an evolving document, used as a planning tool to guide development of collective and individual priorities, and a place to capture future issues and ideas.

Additional documents and resources are available at: <https://www.mafmc.org/climate-change-scenario-planning>.

Recent Activities

The Mid-Atlantic Council last received an update on scenario planning at its April 2023 meeting. All major stages of the scenario planning initiative have now been completed, and the outcomes are being considered by individual management bodies and the expanded Northeast Region Coordinating Council to identify next steps.

Following the February 2023 Summit meeting, the core team developed a **summit report** summarizing the proceedings of the summit meeting and the potential actions identified by participants. Summit participants had identified potential practical next steps for a limited number

of ideas under each of the three discussion themes, but there was not time to develop practical next steps for all potential actions that generated some level of support. As such, the core team identified the need for an additional document to review the actions identified at the Summit and suggest possible next steps beyond what could be considered at that meeting. This additional document evolved into the **Potential Action Menu**.

The NRCC + South Atlantic Council (NRCC+) reviewed draft versions of these documents at their May 9-10, 2023 meeting. The NRCC+ prioritized some of these potential actions for near-term work, identified other potential actions as medium to long-term possibilities, and briefly discussed a small number of actions that are not currently priorities but could be revisited in the future.

The action menu is intended to be an evolving document, used as a planning tool to guide development collective and individual priorities, and a place to capture future issues and ideas. It is not the intent that individual management bodies would necessarily approve or endorse this document in full, and not all potential actions will be appropriate to apply universally. Some may be relevant for only certain areas, management bodies, or FMPs, while others would need to be applied consistently or developed cooperatively to be effective.

Next Steps

Two new groups are being formed to help support the implementation of scenario planning outcomes. The **East Coast Climate Coordination Group** will be responsible for tracking progress toward implementation of potential actions, promoting prioritization of actions (jointly or by individual management organizations), estimating resources needed, and supporting coordinated implementation. A **Climate Innovation Group** will be formed, and while the specific role of this group is to be defined more specifically by the Climate Coordination Group, potential roles for the Climate Innovation Group include tracking information and changes relevant to East Coast fisheries, identifying ideas that are worthy of consideration by the Coordination Group, and identifying possible new actions to undertake.

The other East Coast Councils and the Atlantic States Marine Fisheries Commission are reviewing the scenario planning outcomes (or have already done so) at their June through September meetings, with likely integration of feedback from those discussions into their priorities setting processes, similar to what is planned for the Mid-Atlantic Council.

Staff Recommendations: Mid-Atlantic Fishery Management Council Priorities in Response to Scenario Planning Outcomes

At the August meeting, the Council should review the scenario planning outcomes and potential actions and discuss which topics or actions should be prioritized by the Mid-Atlantic Council. Actions may be undertaken individually or in collaboration with other organizations, depending on the nature of the action. Feedback from the Council during this discussion will inform the development of the implementation plan for 2024, which will be discussed by the Executive Committee at the October Council meeting and approved by the full Council in December. Staff recommendations for near-term and longer-term priorities for the Mid-Atlantic Council are summarized below.

Near-term recommendations (for potential inclusion in 2024 implementation plan)

- **Address High Priority Potential Action G1: Reevaluate Council committee structure, use, and decision making.** This action relates to reconsideration of committee structure, use, and decision making to address representation concerns related to changing species distributions. As described in more detail in the Potential Action Menu (page 7), the Council should re-evaluate its committee representation, with a focus on FMPs where managed species have shifted or are highly vulnerable to climate change. The Council should also consider enhancing the role of committees in decision making and moving toward more alignment in the use of committees across Councils. Staff recommend addressing the practical next step identified in the document, “Conduct a leadership planning exercise to further explore options for committee-based decision-making, committee structure, and committee use, building on ideas discussed at the Summit.”
- **Address High Priority Potential Action G2: Reevaluate and potentially revise Advisory Panel representation.** The Council will go through an Advisory Panel reappointment process in early 2024, as the current member terms run through June 30, 2024. When conducting the next AP appointment cycle, staff and the Council should explicitly consider how representation needs may have changed/be changing over time based on changing ecological and socioeconomic conditions (e.g., changes in participation by state or region, changes in participation in a particular sector, changes in fishing practices, etc.).
- **Hire a contractor to conduct a program review of the Council’s process of developing and implementing fisheries management regulations. This addresses one aspect of High Priority Potential Action M2: Streamlining FMP documentation and rulemaking.** One of the top themes that emerged from the scenario planning discussions is the need to increase the adaptability and nimbleness of the process of developing and implementing federal fishing regulations. The Council, in cooperation with GARFO, should review its processes and practices for development and implementation of fishery management actions to identify opportunities for improvement in the areas of efficiency and adaptability in our regional processes for developing fishery management regulations and their supporting documentation, to be more responsive to climate change and the risks and challenges that our fisheries face, while still addressing requirements for applicable laws and providing for meaningful public input opportunities.
- **Integrate scenario planning themes and potential actions (where applicable) into the development of the Council’s 2025-2029 Strategic Plan and Research Priorities documents.** The Council will develop the next 5-year strategic plan and 5-year research priorities in 2024. Scenario planning themes and actions should be integrated into the strategic plan and the research priorities where possible. A specific research priority that staff recommend incorporating is the development of a process and methodology to characterize and track distribution changes for our managed species in a more comprehensive manner. This was recently identified by the Scientific and Statistical Committee (SSC) as an area that needs additional research focus.

- **When revising the Mid-Atlantic Council’s Ecosystem Approach to Fisheries Management (EAFM) risk assessment, consider how to address High Priority Action M1: Identify ecosystem-level contextual information that can be considered within the management process to help incorporate climate information into decisions.** Development of the Council’s updated risk assessment in 2024 could consider scenario planning outcomes and alternative ways to integrate the risk assessment into management. The scenario planning potential actions, together with the risk assessment, could also inform the Council’s next priority project(s) under the EAFM initiatives.

Longer term recommendations

Depending on the priorities identified for 2024, the items below may not be feasible to address next year, but could be prioritized over the next few years.

- **Address High Priority Potential Action G3: Develop joint management agreements with aim of clarifying roles and increasing efficiency.** A high priority “next step” identified under this potential action included “Review joint FMPs and agreements between the MAFMC and Commission (summer flounder/scup/black sea bass/bluefish) to identify areas for improved efficacy and efficiency.” Staff recommend addressing this action in the next few years.
- **Evaluate the potential benefits and needs for development of a recreational study fleet, to address High Priority Action D3: Expand study fleet, include recreational fisheries, and ensure data are used.** Currently, there is a pilot program being conducted in New England for a recreational for-hire study fleet. The pilot is limited to groundfish in New England, but could potentially be expanded in the future to other areas and fisheries. The Mid-Atlantic Council could also consider lessons learned from that program and develop its own recreational study fleet program. Additional evaluation would be needed to determine the goals of such a program as well as its potential costs, benefits, and logistics.
- **In addition to the risk assessment, consider other approaches to integrating scenario planning outcomes and actions into the existing, or a revised, EAFM framework and future initiatives.**
- Consider developing a **guiding document or policy to consider climate resilience** in its fishery management plans and other work, such as a climate resilience framework for developing and evaluating management actions. This could integrate considerations across several of the scenario planning actions and themes.

Report of the February 2023 East Coast Climate Change Scenario Planning Summit Meeting

April 2023



New England
Fishery Management Council



MID-ATLANTIC
FISHERY MANAGEMENT COUNCIL



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Executive Summary

This document provides a comprehensive summary of ideas generated at an East Coast Scenario Planning Summit Meeting attended by over 50 East Coast fishery managers on February 15-16, 2023. Summit participants consisted of representatives from each of the three U.S. East Coast Fishery Management Councils, the Atlantic States Marine Fisheries Commission, and the National Marine Fisheries Service.

The goal of the Summit meeting was to develop a set of potential governance and management actions resulting from a scenario-based exploration of the future. It was not possible for the Summit to cover all the issues raised throughout the 2-year scenario process. Instead, focus was placed on **three overarching themes** highlighted in Council and Commission discussions during their meetings in November and December 2022. These themes were:

- **Cross-Jurisdictional Governance and Management:** evaluating the current East Coast fishery governance structure and identifying potential changes to increase our ability to respond effectively to changing conditions
- **Managing Under Increased Uncertainty:** identifying actions to take to prepare for and respond to an increase in uncertainty, where historical conditions can no longer be used to predict the future
- **Data Sources and Partnerships:** identifying how to better coordinate data collection systems and develop partnerships to leverage existing funding

The Summit agenda involved breakout group conversations and prioritization exercises designed to highlight the most promising potential ideas to address the challenges in each of these themes. Many ideas were raised, with particular emphasis placed on the following:

Cross-Jurisdictional Governance

Discussions centered around the importance of future governance structures being more adaptable to continual change, but also recognized the trade-offs between flexibility and consistency/coordination. Participants discussed the possibility of a single, East Coast Management Council with state or fishery-based opt-in representation. But a change of this magnitude, and the barriers of losing the unique characteristics of regional councils and a need to revise the Magnuson-Stevens Act, led to a discussion focused on how we could work toward changes within our current governance structure. Specifically, many supported reconsideration of committee representation, while moving toward more consistent use of committees across Councils and with consideration of modifying voting rules to enhance the role of committees in the process. In addition, many participants raised issues around clarifications of roles and considerations of efficiency in jointly or cooperatively managed stocks. The group recognized that there is a spectrum of approaches to joint or collaborative management, and while not all joint management needs to operate the

same way, clearly defining and recognizing the pros and cons of different approaches would be helpful.

Participants also discussed when and how changes in management authority should be made. Generally, participants felt that triggers should be used to initiate a *review* of management authority, and not trigger immediate change. Participants felt improved coordination within and between all management bodies (all three Councils, the Commission, and the National Marine Fisheries Service or NMFS) was needed. Ideas that received particular attention included improving the coordination between and within NMFS regions, and increasing cross-pollination of the three Council Scientific and Statistical committees (SSCs).

Managing Under Increased Uncertainty

Attendees agreed that improved risk policies may provide a means to better account for current and future climate impacts on species, including both negative and positive impacts. Participants also discussed the possibility of moving toward robust management options rather than trying to account for all kinds of uncertainty within stock assessment models, and raised the idea of considering different management approaches at the leading and trailing edges of a shifting species range. Across all of these, we may be able to make better use of tools such as climate vulnerability assessments and management strategy evaluations. Qualitative sources of information and local ecological knowledge have the potential to inform management in a rapidly changing environment, but we will need mechanisms to include these sources in our work.

Data Sources and Partnerships

Fostering better coastwide cooperation must extend beyond jurisdictional issues to include data collection and partnerships. Many scientific surveys are conducted along the East Coast, including by federal and state entities, but the methods of data collection and storage vary greatly. Many regions/entities may not even be aware of what data is collected by another. This contributes to difficulties in sharing data and risks duplication of effort. Participants discussed creating consistent surveys across regions, and at a minimum standardizing the way that data is stored to improve accessibility. Other ocean users also collect environmental data that is important to track under changing climate conditions, so attention should be paid to better partnerships with offshore wind developers, aquaculture, marine transportation, and the military.

There was extensive discussion on reducing uncertainty in fisheries dependent data. This discussion covered incentivizing fishermen to improve reporting of data and collect new data, improving recreational data collection, and improving social-economic data for use in management.

Managing under a changing climate requires a lot of data input, but it is impossible to collect everything of interest. Data prioritization needs to occur - but this requires a clear understanding of how the data will be used. Prioritization must involve increased communication between the science centers and management bodies, including periodic reviews of research priorities.

Next Steps

It was agreed that a report of the Summit Meeting (this report) would be presented to the NRCC for their review at their May 2023 meeting. Presentations of the findings from the Summit will also be presented to each of the three East Coast Councils and the Commission.

In addition, the Scenario Planning Core Team will also draft a separate document to make specific suggestions on which potential action areas to explore further. Following review and discussion of the elements contained in this "draft action plan" document, the NRCC will determine a way forward.

1. Introduction

Over the past two years, representatives from these East Coast fishery management organizations have worked collaboratively and engaged diverse stakeholders to explore how climate change will affect various aspects of fishery management. This exploration was based on a multi-stage scenario planning process, where stakeholders generated several different possibilities for how climate change might affect east coast fisheries.

This document provides a comprehensive summary of ideas generated at an East Coast Scenario Planning Summit Meeting attended by over 50 East Coast fishery managers on February 15-16, 2023. Summit participants consisted of representatives from each of the three U.S. East Coast Fishery Management Councils, the Atlantic States Marine Fisheries Commission, and the National Marine Fisheries Service (NMFS).

Previous steps of the initiative have included: 1) conducting a scoping process for issues facing East Coast fisheries over the next twenty years; 2) exploring the drivers that will shape future change in East Coast fisheries 3) creating a set of four scenarios describing possible conditions in 2042, and 4) gathering initial feedback from managers, Councils and Commission on important issues to address in response to climate related challenges.

The goal of the Summit meeting was to develop a set of potential governance and management actions resulting from this scenario-based exploration of the future. During the meeting, participants discussed ideas already generated throughout the process, added new ideas, evaluated them, and identified some practical next steps to take them forward. In order to encourage creative thinking about what changes might be required, participants were asked to consider the following:

Imagine you are a fishery manager in 2043. What do you wish the fishery managers of 2023 had done back then? What actions should they have taken? What things should they have started?

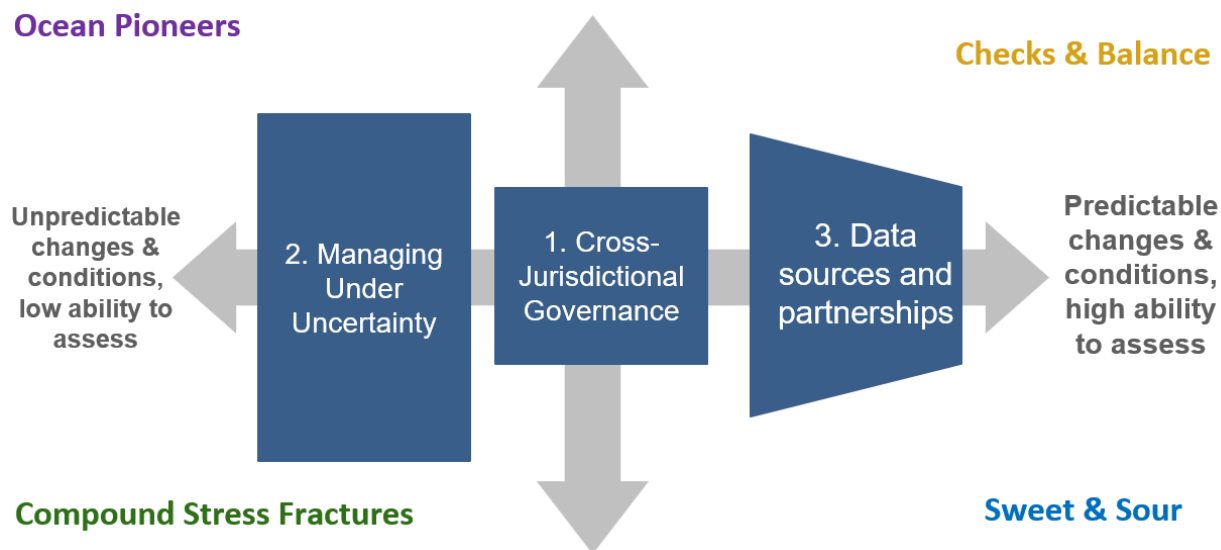
2. Overarching Discussion Themes

It was not possible for the Summit to cover all the issues raised throughout the scenario process. Instead, focus was placed on **three overarching themes** highlighted in Council and Commission discussions during their meetings in November and December 2022. The Summit began with scenario planning Core Team members providing an overview of each of the themes, followed by a brief plenary discussion.

Members of the Core Team provided a brief introduction to each of the three overarching themes, and outlined a number of key questions to be considered during the workshop. Additional detail on the themes below can be found in the Summit briefing materials, available at: <https://www.mafmc.org/s/ECSP-Summit-Briefing-Materials-Feb-2023.pdf>.

Theme 1: Cross- Jurisdictional Governance	A major goal of this initiative has been to evaluate the current East Coast fishery governance structure and identify potential changes to increase our ability to respond effectively to changing conditions. "Governance" here addresses the structure of power, authority, and responsibility for fisheries and geographic areas.
Theme 2: Managing Under Increased Uncertainty	Environmental changes are leading to changes in the distribution and abundance of marine resources. In some cases, these changes mean that historical conditions can no longer be used to predict the future, increasing our uncertainty around appropriate catch limits and management responses. Are there actions we can take now to prepare for and respond to this increase in uncertainty?
Theme 3: Data Sources & Partnerships	The scenario creation framework considered how well science will be able to assess and predict changes in stock production, distributions, and other changing dynamics. This hinges on the ability to produce and evaluate accurate and timely data. Summit discussions focused on how to better coordinate data collection systems and develop partnerships to leverage existing funding.

The three themes are related to the scenario framework in the following way:



- **Cross-jurisdictional Governance:** this theme is relevant across all expected future scenarios. Species range shifts will occur no matter which scenario plays out, so it is important to consider how fishery managers will cope with situations that pose challenges for existing governance structures.
- **Managing Under Increased Uncertainty:** this theme is particularly relevant for scenarios where climate change causes highly unpredictable changes in conditions, leading to less reliable forecasts and assessments (the left-hand side of the matrix). How must management and decision-making evolve to cope with such situations?
- **Data Sources and Partnerships:** this theme reflects the fact that fishery managers rely on timely and accurate information. This theme covers how best to coordinate data collection systems and developing partnerships to leverage funding - in doing so, this might shift us towards the right-hand side of the matrix, where better data creates an improved ability to forecast and assess future conditions.

Later sections of this report describe the discussions and outputs according to each of these three overarching themes. Although the report is structured in a way that treats each theme in turn, it is recognized that there are clear overlaps and interaction between the themes.

Participants were also made aware of a number of other issues that were raised during previous phases of the scenario planning process. These “other issues” were not the

focus of the themes for Summit meeting discussion, but it was recognized that they may intersect with the three overarching themes in various ways. The topics identified were:

- Planning for the challenges associated with other ocean uses (wind, aquaculture) and the potential for spatial analysis and planning to help with these challenges.
- Continuing movement toward ecosystem-based fisheries management (EBFM), and the need to consider the importance of forage species.
- Ensuring adequate shoreside access and infrastructure for recreational and commercial fisheries.
- Increasing trust between stakeholders and managers, including improving communication on science and uncertainty.
- Protecting the edges of stocks that move into new areas or as new fisheries emerge.
- Consider the appropriate role of the Councils, Commission, and NMFS in creating and supporting markets for fishery products as conditions change.
- Planning for the aging of the fleet.
- Understanding that politics (and litigation) can play a big part in fisheries management.

Participants were encouraged to add any potential actions for these themes by writing on flipchart sheets or using post-it notes.

Following the Core Team's presentation of the themes above, participants had the opportunity to ask clarifying questions and express initial reactions to these discussion categories. During this discussion, participants noted the need for this process to be able to consider multi-directional changes (e.g., in ocean temperature), the need to keep in mind the differences between open access vs. limited access fisheries, and the need to think about the possibility of increased funding and how to best use additional funding should it materialize (rather than just flat or reduced funding).

3. Summit Design and Agenda

Breakout Group Conversations

Following the introductory presentations, participants were divided into three breakout groups, each containing around 18 people. Each group had the chance to discuss a theme in a rotation format, with each breakout conversation lasting for approximately 90 minutes. For example, Group 1 started by discussing Cross-Jurisdictional Governance. After 90 minutes, they rotated to another room to discuss Managing Under Uncertainty. Finally, they moved to another location to discuss Data Sources and Partnerships. Groups 2 and 3 also rotated through the three themes, beginning with a different issue.

The result was that groups were able to generate ideas and review ideas from groups that had previously discussed the issues. By the end of the first day of the workshop, each participant had the opportunity to explore ideas across all of the three themes.

The main ideas that emerged from these breakout group discussions are presented in sections 4-6 below, according to theme. A more complete summary of all breakout group ideas is contained in the Appendix for each theme (Appendices B, C, and D).

Summary of Potential Actions

At the end of Day 1, the Core Team facilitators reviewed the notes from the day's breakout group conversations for their theme and created a non-prioritized list of potential action areas that had been identified throughout the day. It was not possible to capture every idea as an individual potential action, but the Core Team was able to group comments and ideas made across breakout groups into common themes and potential areas for action. The list of potential action areas is presented in the following report sections.

The full lists of potential actions were shared with all participants at the start of Day 2. Each breakout group had a chance to review the list of potential actions for each theme, and ask clarifying questions about what the potential action covered. This resulted in a small number of adjustments to the wording of some potential actions.

Prioritization of Potential Actions Using Dot-Voting

Participants were then asked to prioritize the potential actions in the following way. Everyone received 8 votes in the form of dot stickers. Votes could be allocated across any of the potential action areas in any of the themes, but participants could not vote for the same potential action more than once.

Participants were asked to prioritize and choose their votes based on the following considerations:

- Potential actions that will help fishery managers prepare for and cope with the challenges of climate change;
- Potential actions that fishery managers are able to influence;
- Potential actions that are feasible to implement, or where some progress can be made.

The results of the dot-voting exercise are presented in Appendix E.

Plenary Discussion to Identify Preliminary Next Steps

The dot-voting exercise revealed the potential actions areas that the group felt should be addressed as a matter of priority. We held a full plenary discussion to identify how best to make progress for each of those priority action areas. The details of these discussions, and the preliminary next steps agreed to by the group, are presented in Sections 4-6 below for each of the themes.

4. Cross-Jurisdictional Governance

The sections below provide an overview of the guiding questions for cross-jurisdictional governance, a summary of the main ideas discussed in the breakout group, the list of potential actions identified, and a summary of the follow up plenary conversations. Additional details on the breakout discussions around cross-jurisdictional governance can be found in Appendix B, and prioritization exercise (dot voting) results can be found in Appendix E.

Overview

Climate change impacts are already affecting ocean conditions. Ocean temperatures are expected to continue to rise in the decades ahead, no matter which of our scenarios plays out. These rising temperatures will lead to an increased likelihood of stocks shifting their location, often moving north and into deeper waters. In some scenarios, the shifts in location might not be as predictable as this, but changes are still highly likely to happen. These shifts will pose challenges for current governance structures and arrangements, which were mostly established under the assumption that stock locations would remain relatively stable over time. This is no longer the case. In all the scenarios identified in this process, we must assume that stocks will shift, and identify ways that governance approaches can respond.

During the small group discussion portion of the meeting, groups were asked to focus on three organizing questions related to the overall theme of “Cross-Jurisdictional Governance”:

- What is the best structure and representation for governance on the U.S. East Coast?
- When and how should management authority change?
- How can we improve the efficiency and the efficacy of joint fishery management plans?
- How can we improve coordination and collaboration among management entities?

Breakout Group Discussions: Main Ideas

The three breakout groups discussed the governance questions outlined above, with an emphasis on the importance of future governance structures being more adaptable to continual change. The groups discussed broader governance organization, including discussions on how many decision-making groups there should be and who is represented at these decision-making groups. For stakeholder involvement, too many governing groups make participating in the process more difficult. There was discussion around whether the ideal governance structure could de-emphasize state-by-state representation, but many felt that state-by-state approaches had value.

The largest structural change discussed was a change to a single, East Coast Fishery Management Council with state or fishery-based opt-in representation by species or fishery management plan, similar to the Board opt-in process used by the Commission. A change of this magnitude would require substantial revisions to the Magnuson-Stevens Act, which was acknowledged throughout the discussion. While some participants thought the opt-in approach would allow for focused participation and a system that could more easily adapt to changing conditions, others felt that a Council of this size would be tricky to populate and would result in stakeholders feeling less invested in and with less influence over the organization and its outcomes.

Much of the discussion was focused on the varying uses of committees across the various management bodies. Participants acknowledged that each Council uses committees somewhat differently, with committee use in the South Atlantic and New England somewhat more similar to each other compared to the Mid-Atlantic. The number of joint management plans with the Mid-Atlantic and the Commission Boards makes committees difficult to administer. Many felt the approach being used to add voting members from other Councils to species committees has been successful. However, others felt that this positive influence is muted when the full Council makes a different decision than the committee or when the committee is not used at all in the decision-making process. As a result, many supported moving toward more consistent use of committees across Councils, and consideration of modifying voting rules to enhance the role of committees in the process (for example, limiting the power of a Council to overturn a committee decision during final voting, with failed Council approval resulting in issues being returned to the committee).

In addition, many participants raised issues around clarifications and considerations of efficiency in jointly or cooperatively managed stocks. The group recognized that there is a spectrum of approaches to joint or collaborative management, and while not all joint management needs to operate the same way, clearly defining and recognizing the pros and cons of different approaches would be helpful. Joint management has benefits for representation, but also can hinder efficiency and efficacy when groups disagree, particularly if decision making is sequential. More explicit agreements between joint management participants could help to increase transparency and help groups work toward streamlining joint management processes. For both the committee and joint plan discussions, it was emphasized that these changes should apply at the plan level and would not need to be used across all plans in the same way.

Participants also discussed when and how changes in management authority should be made. Generally, participants felt that triggers should be used to initiate a *review* of management authority, and not trigger immediate change. Some participants felt strongly that a change in authority request should only come from one of the Councils. Additionally, because of the concerns regarding Council member and staff expertise, as well as the resources required for transition, transitions should be well-thought out and should not be structured in such a way that frequent changes would be required.

Participants felt improved coordination across and with all management bodies (all three Councils, the Commission, and NMFS) was needed. Ideas that received particular attention included improving the coordination between and within NMFS regions and increasing cross-pollination of the three Scientific and Statistical Committees (SSCs). SSC members and managers could benefit from more exchange of ideas and information across SSCs, particularly for species shifting across jurisdictions and for jointly managed species. In addition, mechanisms for more joint SSC workgroups or meetings and advice could be explored.

Potential Actions for Cross-Jurisdictional Governance (Non-Prioritized)

As discussed in Section 3, following the three breakout groups, Core Team members consolidated the concepts discussed into eight primary ideas for cross-jurisdictional governance. These ideas were primarily centered around the main questions that were considered, but were not presented in a way that required participants to make this/not that determinations. The dot voting was used to illustrate preferences for which actions should be investigated further in the shorter-term. The **potential actions highlighted in yellow** emerged as the top preferences in the cross-jurisdictional governance category.

Cross-Jurisdictional Governance - Potential Actions
<p>Coastwide Council with varying voting representation by FMP</p> <ul style="list-style-type: none"> ● One large Atlantic Coast Fishery Management Council that would allow members/states to opt-in to certain FMPs based on fishery interest. ● <i>Would require a modification to the MSA.</i>
<p>Committee-Based decision making where committees have final vote</p> <ul style="list-style-type: none"> ● In the style of ASMFC Boards, this would structure decision making so that the committees have final votes on FMP actions. The action would not need approval by the full Council. ● <i>Would require a modification to the MSA.</i>
<p>Committee-Based decision making with final Council approval</p> <ul style="list-style-type: none"> ● Modifying the Council SOPPs could allow increased decision making authority at the committee level, by changing procedures such that committee motions that do not pass the full Council get sent back to the committee to be reworked.
<p>Clarify and potentially expand the roles of liaisons between Councils</p> <ul style="list-style-type: none"> ● Consider more consistent use of liaisons across Councils ● <i>If roles were expanded to include voting rights, this would require MSA change.</i>
<p>Change state representation on Councils</p> <ul style="list-style-type: none"> ● Consider modifications needed to state representation, including potentially having more states sit on multiple Councils ● <i>Would require a modification to the MSA.</i>

Consider allowing proxies for Council members

- Proxies would help alleviate workload on individual members, especially if other changes such as increasing joint management or expanding committees occurs.

Re-evaluate and potential revise Advisory Panel representation

- Consider regional/stakeholder interests, including underrepresented/underserved groups

Evaluate mechanisms for cross pollination of SSCs, particularly for jointly managed species

- Managers could benefit from more exchange of ideas and information across SSCs, particularly for species shifting across jurisdictions and for jointly managed species. In addition, mechanisms for more joint SSC meetings and advice could be explored. This could include a coastwide SSC with species-specific complex decision making, joint SSC meetings or the use of SSC liaisons.

Move to more consistent use of committees across Councils and re-evaluate committee representation for each committee/FMP

- Currently, each Council and FMP uses committees differently in the decision-making process. Considering modifying regional/stakeholder group representation could be more effective if Councils used committees in a similar manner.

Improve coordination across NMFS Regional Offices, Science Centers, and General Counsel

- Coordination of processes, information, and guidance within and between different offices of NMFS will be critical as conditions continue to change.

Review joint management plans along coast to explore areas for increased efficiency

- Refers to management plans that are joint or complementary among two or more management entities. Review could occur for all joint plans at once or at an individual FMP level, or some combination of both.

Develop more explicit agreements for joint management

- Joint or cooperative management by two or more management entities currently has varying levels of explicit agreements about the joint management process. Agreements like MOUs could be developed (potentially with sunset provisions) to clarify roles, responsibilities, and processes.

Plenary Discussion: Identifying Preliminary Next Steps for Cross-Jurisdictional Governance

The above yellow highlighted potential actions were the focus of plenary discussion. The group discussed possible mechanisms to move these ideas into the management process. It was noted that the topic of governance structure would need a coordinating body (e.g., an expanded NRCC) to further examine the issues and make recommendations.

Move to more consistent use of committees across Councils, re-evaluate committee representation, and consider committee-based decision making with final Council approval

The discussion focused on finding mechanisms for more consistency in the governance structure between management regions, particularly more effective and better aligned use of committees between the three Councils. This could allow some representation concerns to be addressed in a more meaningful way without legislative changes, particularly for species where substantial portions of their distribution span multiple management jurisdictions or may in the future. Councils could come up with a framework with some consistencies across Councils but allow some flexibility to preserve the unique history and culture differences in the current process.

Evaluate mechanisms for cross pollination of SSCs, particularly for jointly managed species

The discussion focused on better mechanisms for information exchange between SSCs, particularly when two Councils are working on the same species. While there could be utility in looking at this issue on a national scale in the long term, it is important to address this on a regional scale to start. Sub-groups of each region's SSC could meet to discuss a topic or there could be one SSC for the whole region. The group noted that the Commission's scientific group should also be a part of this process.

Next Steps for the Above Actions

A leadership group should be tasked with the following as a first step to address the potential actions above:

- Leadership planning exercise to look at Council species committee structure (use of and more consistency). This would include the membership of the committee as well as how decisions are made.
- Leadership planning exercise to look at the SSC committee structure for cross pollination of Atlantic coast SSCs.
- Clarify Council liaison role and discuss how the liaison could be used consistently across the Atlantic coast Councils.
- For the long term, the national convening of SSCs (the Scientific Coordination Subcommittee of the Council Coordinating Committee) could be one venue to generate additional discussion of how to increase SSC cross-pollination and regional coordination.

Additional Governance Themes Identified for Near-term Wins

In the plenary discussion, participants also identified the following potential next steps for other governance-related actions:

- Identify additional coordination between the NOAA regional offices and science centers to decrease inconsistencies. Think about coordination among regional offices to promote consistent Council interactions.
- Reduce the number of committees and inputs to simplify the process; bring the stakeholders to one place. Seeking improved communication by reducing the number of layers instead of expanding the layers.
- Review the Joint and Complementary plans for ASMFC and the Councils for efficiencies (ways to segregate actions so there are less redundant actions) (this may be a short and long term potential action)
- Consider the final 304f Policy and the impacts to both the Councils and the Commission. The impacts of the 304f policy are important to consider when developing short and long-term potential actions.

5. Managing Under Increased Uncertainty

The sections below provide an overview of the guiding questions for managing under increased uncertainty, a summary of the main ideas discussed in the breakout group, the list of potential actions identified, and a summary of the follow up plenary conversations. Additional detail on the breakout discussions around cross-jurisdictional governance can be found in Appendix C, and prioritization exercise (dot voting) results can be found in Appendix E.

Overview

There are two main approaches to dealing with uncertainties in fisheries management: first, increase investment of time and funding into research and science to better understand the situation and potentially decrease uncertainty in predictions (moving towards the right side of the matrix), and second, create management approaches that will have a good likelihood of being successful even with uncertainty (moving toward the left side of the matrix). Given that conditions on both sides of the matrix are plausible, we need to prepare for all situations.

In addition to planning for uncertainty, being able to respond quickly to change (at management and stakeholder/community levels) will be both useful and necessary. Where science can predict and track changes (right side of the matrix), managers and stakeholders may be able to prepare for the coming changes (creating if/then structures to reduce response times). Where science is less able to predict and track changes, managers and stakeholders will need to be nimble as stocks shift, collapse or exhibit other unpredicted changes. See below for more on these ideas.

During the small group discussion portion of the meeting, groups were asked to focus on three organizing questions related to the overall theme of “Managing Under Increased Uncertainty”.

- How can we increase flexibility, adaptability, and robustness in management?
- How can we better accommodate uncertainty in the stock assessment process and address related management challenges?
- How can we improve the ability for fishermen and other stakeholders to adapt to climate change?

Breakout Group Discussions: Main Ideas

Updating risk policies to better account for climate challenges was the topic discussed the most in the breakout groups. There was agreement that it would be useful to compare risk policies across all the Councils, including how they account for uncertainties due to climate. NEFMC has hired a contractor to compile this information and their report will be made available this spring. ASMFC has a draft risk policy that includes information on climate concerns and information on economic importance that can decrease or increase catch levels, respectively. There was concern that some

existing risk policies only decrease catch, and there is no mechanism for increasing catch for species showing positive responses to a change in climate. Multiple participants also noted a need to track risk, decisions, and consequences to better learn from past decisions (in management and in stock assessments). One participant noted the need to look at consequences, not just at risk, to help determine appropriate management. There were suggestions to include qualitative information when looking at risk. For example, this is done with red tide in the Southeast, and through risk tables in the North Pacific. Results of climate vulnerability assessments could also be used to understand areas of higher and lower risk. A participant noted that Europe has started providing maximum sustainable yield (MSY) as a range with other factors impacting what part of the range is used for management. Participants noted this would require Councils to be very disciplined or they would consistently pick the highest number on the range. One participant suggested moving toward dynamic reference points, but noted that as management adjusted to this new tool, there would be some failures before successes. Multiple participants agreed that the risk policy could be useful for determining what risks (and failures) would be acceptable.

During discussions focused on flexibility and adaptability, participants noted a need to define these terms to ensure common understanding and goals, and agreed that looking at what is achievable and what should be prioritized is also important. There was concern from some that too much flexibility could lead to large swings in management from year to year and that could be detrimental as businesses need stability for planning. At least one of the breakout groups spent a bit of time discussing permits and how they could be more adaptable. Revising or updating permits is a difficult subject to address, however, there could be some easier wins. For example, adding emerging species to existing permits and removing historical moratoria on permits could help add adaptability. There are also requirements to bundle permits that may no longer make sense and should be reconsidered. A few larger changes in permits were also suggested, such as switching from species specific permits to area based permits, and switching from state permits to a universal federal permit that would adjust to species distribution and abundances (for charter boats). When discussing some aspects of permit flexibility (e.g., area based permits or permits that provide flexibility to land a mix of species that are related or caught together), the tendency for fishermen to target high value species would need to be considered to ensure this does not create more choke stocks. There was also a discussion on the need to improve flexibility in fishing gear regulations (Councils have restrictions on what gear can be used to fish what stocks).

Part of the breakout discussions also focused on the idea of if/then management triggers. In general, by identifying triggers and the appropriate management response before the trigger is hit, management will be poised to be responsive and it will reduce administrative work. There were suggestions on how these if/then triggers could be added to existing processes. For example, the MAFMC could add triggers to their risk assessment process, triggers could increase responsiveness when there is joint management across multiple Councils, and triggers could be tied to ABC control rules.

There was a comment that increasing uncertainty should not only equal increased precaution and decreased catch limits. Participants also noted the need to think outside the box, for example, how could this idea tie to EBFM? Is there a way to incorporate qualitative information from fishermen or other sources into the triggers? Can other information also be considered, such as habitat, or predator and prey information, especially in situations where there is a disagreement on the status of a stock? In all of these situations, good communication and transparency about the process will be key.

Potential Actions Identified Across Breakout Groups for Managing Under Increased Uncertainty

As discussed in Section 3, following the three breakout groups, Core Team members consolidated the concepts discussed into eleven primary ideas for managing under uncertainty. These ideas were primarily centered around the main questions that were considered, but were not presented in a way that required participants to make this/not that determinations. The dot voting was used to illustrate preferences for which actions should be investigated further in the shorter-term. The **potential actions highlighted in yellow** emerged as the top preferences in this category.

Managing Under Increased Uncertainty - Potential Actions
<p>Identify and establish best practices for if/then trigger management</p> <ul style="list-style-type: none"> • If/then triggers include Identifying conditions (and necessary data) that would trigger a pre-specified management response • Provide examples where this has previously been successful • Consider when this type of management process could be useful, include consideration of governance change triggers and ecosystem-based triggers
<p>Look into streamlining NEPA compliance and documentation</p> <ul style="list-style-type: none"> • Examine whether programmatic EISs (evaluating broad proposals or planning-level decisions) could streamline document preparation for actions tiered off the programmatic EIS • Consider possibilities for use of functional equivalencies where possible (i.e., using MSA documents to fulfill NEPA requirements) • Establish consistent guidance across regions, including from the NEPA program and from General Counsel • Expand use of Supplemental Information Reports (i.e., reference but do not include information in NEPA analyses that is available elsewhere)
<p>Include spatial considerations in management</p> <ul style="list-style-type: none"> • Consider whether and how to manage the leading and trailing edges of a species distribution differently, perhaps considering different management (harvest strategies) for different portions of the stock

Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts)

- Future proofing
- Consider pros and cons of moving toward consistency across species or regions
- Consider including qualitative and ecosystem information in the risk policy framework to improve the understanding of risk and appropriate management responses

Consider risk assessments to identify fisheries at risk of not meeting management goals

- Risk Assessments = an assessment of factors that could hinder a fishery from meeting its management goals (front end)
- Risk assessments can combine qualitative and quantitative information, so can include more sources of information
- Consider how risk assessments can be used not just to set priorities but also in stock assessments and management

Move toward robust management options rather than trying to account for all kinds of uncertainty within stock assessment models.

- Consider dynamic reference points and indicator based management
- Assess options for better including climate vulnerability assessment results into management
- Consider when management strategy evaluations and other structured decision making tools are useful.

Use qualitative information to improve management, including our understanding of risk. Specifically, better incorporation of local ecological knowledge / traditional ecological knowledge into management is needed.

- Inventory where and how qualitative information, including local and traditional ecological knowledge is currently being used in management and identify ways into management process
- Explore participatory modeling

Consider and clearly communicate intricacies of uncertainty when making policy/ changing management

- Where does uncertainty matter?
 - For example - 2 tailed distributions- is uncertainty bigger in one direction vs. the other? Are both tails being considered?
 - A large uncertainty may not be a big issue if there is certainty that the stock is improving

Create a more adaptable structure for fishing permits

- Compile information on permits across entire East Coast
- Assess diversity of permits (who holds them, where, in what combinations)
- Assess permit accumulations
- Identify where there are limits in flexibility for fishermen
 - Are there any easy fixes?
 - Identify first steps for harder issues

Identify and remove institutional baggage

- Permit bundles
- Mis-match of mesh sizes across FMPs = regulatory discards
- Gear/trip limits
- Legacy regs

Improve the use of community climate vulnerability assessments in management

- For example, Colburn et al. 2016 (<https://doi.org/10.1016/j.marpol.2016.04.030>)

Plenary Discussion: Identifying Preliminary Next Steps for Managing Under Uncertainty

During the prioritization exercise (dot voting) the following three potential actions emerged at the top preferences for this discussion theme. Additional information on the ranking exercise results for all actions under all three discussion themes are provided in Appendix F.

- Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts)
- Move toward robust management options rather than trying to account for all kinds of uncertainty within stock assessment models. Move away from trying to model more and more uncertainties and consider robust management approaches
- Include spatial considerations in management

The plenary discussion, which is detailed below, focused almost entirely on these three issues, at the direction of the facilitator and Core Team. This is not intended to convey a lack of interest in these other ideas, and they can be addressed by the Councils and Commission in the future.

Improve use of Risk Policies

Risk policies are a way for fishery management organizations to consider multiple elements of uncertainty and risk tolerance in an organized and transparent manner, as part of the management process. Addressing uncertainty has always been a core element of fisheries management, but climate change is increasing the magnitude of these uncertainties, and the range of issues that we are unsure about.

The discussion focused in part on what should be included in risk policies. Suggestions included expanding these policies to explicitly include climate considerations, and guide managers towards decisions that will promote resilience in human and natural fisheries systems. Considering risk policies in light of the four climate scenarios was offered as a way to approach expansion of risk policies. One approach to incorporating climate change into risk policies would be to consider climate winners as species for which catch limits might be increased. Another might be to consider whether risk tolerance should be adjusted to reflect differences in climate sensitivity and exposure by species (as documented in fish-stock level climate vulnerability assessments). In the northeast, black sea bass is an example of a species for which the recreational harvest control rule includes consideration of the biomass relative to the target and thus can take advantage of this species being a “climate winner.”

There was recognition that management organizations use risk policies differently. Commonly they are applied to setting catch advice, but some policies are broader to cover other categories of decision making. NEFMC has recently commissioned a review of all eight regional fishery management Council risk policies and how they are used. Although the Commission’s risk policies were not covered in this report, it was noted that ASMFC uses Mid-Atlantic Council risk policies for their joint Commission-Council Fishery Management Plans, and is adopting its own risk policy soon.

It is important to learn from one another’s policies, seeking alignment where possible, but retaining differences amongst Councils as needed. One area where alignment might be most appropriate is in policies that relate to setting catch limits for jointly managed species.

There was some discussion about the purpose of risk policies, how they can be used in theory, and whether they are effectively employed, in practice, for making and understanding decisions, and as a tool for communication. Another consideration is whether these policies are sufficiently broad in scope to cover all of the decisions that a Council or the Commission might make.

Move Towards Robust Management vs. Modeling Uncertainties

The concept here is that assessment models can be very complex, and can include uncertainties across multiple elements (e.g., uncertainties related to environmental changes, changes in predator/prey relations, changes in fishing behavior, etc.). A possible solution is to move away from trying to incorporate information on all of these uncertainties within the assessment models used to set catch advice and instead

towards alternative models or mechanisms for setting limits. For example, management strategy evaluation could be used to identify harvest control rules or trigger-based management processes that are robust despite these uncertainties. This action received substantial support from Summit attendees, but there was limited concrete discussion around short-term 'wins' or actions.

One near term step may be to look for examples of where this is used and has been successful, to begin a conversation about how these approaches might be employed. For example, bluefin tuna management employs management strategy evaluation to evaluate reliable indicators and simulate expected outcomes of alternative approaches.

Another near term step is to look across all east coast managed species to identify those where uncertainties are significant in scale or occurring in multiple facets of the assessment, and focus on developing new approaches and strategies for those species. As with the risk policy evaluation, climate vulnerability assessments may help to focus this work on species that have greater sensitivity or exposure to climate change.

Include spatial considerations in management

The concept here is that for species with shifting spatial distributions, management approaches might need to vary at the leading and trailing ends of their range. There could be biological reasons for this, perhaps to preserve genetic diversity found in these areas, or to allow stocks to successfully establish a population in a new area. A related issue is lack of fishery access at the leading edge of species' range. This might be more pronounced as a species moves into another Council region, or offshore of states with low quotas where the species cannot be landed. Another potential action, creating more adaptable structures for fishing permits, is a related issue. A challenge is that the Magnuson Stevens Act requires management of stocks as a unit across their range, but does allow for variable management across space. For equity and clarity of communication consistent management approaches across the species range may be important. Whatever the specific concern, adequate scientific information is needed to support differences in management by area. More information about these issues is needed in order to generalize insights and strategies across different stocks. Monitoring of stocks as they move is needed. Where possible, on the water observations by fishermen should be reflected in management measures, including through increased use of LEK and TEK. Consideration should also be given to whether catch accounting is accurate across the entire range of the species. While the directed fishery would have the same monitoring throughout the species range, other fisheries and gear types encountering the species might have different monitoring or reporting rates, especially if a species is new to an area.

Specific management approaches could be considered. For example, establishing de minimis status along the trailing edge of a species range, or considering measures that provide conservation equivalency. Different size limits by state might also be appropriate, perhaps if fish attain different sizes by location due to environmental conditions or genetic differences. Cobia is an example of different size limits by state.

6. Data Sources & Partnerships

The sections below provide an overview of the guiding questions for data sources and partnerships, a summary of the main ideas discussed in the breakout group, the list of potential actions identified, and a summary of the follow up plenary conversations. Additional detail on the breakout discussions around cross-jurisdictional governance can be found in Appendix D, and prioritization exercise (dot voting) results can be found in Appendix E.

Overview

One of the primary axes used to develop the scenarios was based on the predictability of ocean conditions, which includes how well science is able to assess and predict changes in stock production and distributions. While the first two themes are centered on how to handle cross-jurisdictional issues and evolving the decision-making process to handle uncertainty, this theme focuses on our ability to provide the information necessary to do both. Providing information about stocks and their locations hinges on our ability to evaluate accurate and timely data. This theme asks, "How do we better coordinate our data collection systems and develop partnerships to leverage funding?" Coordination between management entities, federal entities, academic partners, fisheries stakeholders, and other ocean users will play a large role in which side of the axis we find ourselves within the scenario framework.

During the small group discussion portion of the meeting, groups were asked to focus on four organizing questions related to the overall theme of "Data Sources and Partnerships".

- How should we prioritize data/information needed to manage in a changing environment?
- How can we use current funding more efficiently?
- How can we better utilize the fishing industry for data collection?
- What are the best ways to foster outside partnerships for sharing data, especially with other ocean users?

Breakout Group Discussions: Main Ideas

During the Data & Partnerships breakout sessions the three breakout groups discussed a variety of different topics using the four organizing questions from above. The conversations went in a number of different directions. However, there were several main ideas that emerged from the discussions including fostering better coastwide cooperation, improving fisheries dependent data collection, and ensuring that data is being utilized for management.

The East Coast has a lot of jurisdictional issues that were discussed in other themes. However, fostering better coastwide cooperation extends to data collection and

partnerships as well. There are many scientific surveys that are conducted along the East Coast, including by federal and state entities. The methods and data collection/storage varies greatly across these surveys. In addition, regionalized institutions have created scientific silos where other regions/entities may not even be aware of what data is collected by another. Both of these factors contribute to difficulties in sharing data and may contribute to duplicative efforts across the region. Suggested actions to remedy this situation include creating consistent surveys across regions and at a minimum standardizing the way that data is stored so that it is more easily accessible to other researchers. Similarly, there are other ocean users that are collecting environmental data that is important to track under changing climate conditions. It would be good to align various ocean users' needs and wants to attempt to leverage new partnerships and reduce the burden on fisheries surveys. Some potential partners include offshore wind developers, aquaculture, marine transportation, and the military.

Aside from fisheries independent surveys, fisheries dependent data is an important part of fisheries management. There was extensive discussion on reducing uncertainty in fisheries dependent data. This discussion can be characterized by three main points: 1) incentivizing fishermen to improve reporting of data and collect new data, 2) improving recreational data collection, and 3) improving social-economic data for use in management.

The first point stems from the need for finer spatial scale data as well as more environmental data. The latter is extremely important when addressing climate change concerns. Fishermen are on the water for a greater proportion of the year than any fisheries independent survey and could provide data at a much finer spatial and temporal scale than surveys can. The question is how to get fishermen to provide accurate data and even expand what data they are collecting. Devising an incentive structure that rewards fishermen for providing data is one potential solution. There also seems to be a lack of communication between the science community and fishermen. Many fishermen are willing to provide data if given an opportunity but lack the instruction or instrumentation to do so. Often it comes down to whether funds are available or not. This led to a suggestion of creating shovel-ready projects that when funding becomes available can be quickly executed by fishermen.

The most discussion during the data sources and partnerships theme was centered on improving recreational data collection. Participants felt that it was a glaring need in the management process with some fisheries, particularly in the South Atlantic, having greater than 50 percent of their catch allocated to the recreational sector. Some of the suggestions on this topic address the other two points as well, such as creating incentives for reporting. Other suggested actions included the creation of a recreational study fleet to help improve recreational estimates. The structure of this study fleet would need to encompass a wide swath of user types from private shore-based anglers to charter vessels. Another suggestion was to utilize crowdsourcing as a means to expand data collection. This included mining of social media to get data from something recreational anglers love to do which is post pictures of their catch.

The third point, while not discussed in as much detail as the other two, is also very important as we deal with a changing climate and shifting biological productivity. In the end, fisheries is about managing human activity and therefore the human dimensions of the system need to be addressed and monitored. Changing conditions could alter the very definition of what it means to be a fisherman. Do fishermen continue to fish on a particular species or adapt to whatever species are nearest to their port? The cost of chasing a species up the coast could become too prohibitive for smaller owner-operators. The data required to address this point can be difficult to collect and analyze but should be considered when any data prioritization within the region occurs.

The final main idea from data sources and partnerships was ensuring that data is being used in management. Managing under a changing climate requires a lot of data input to make the most informed decisions on the future. Unfortunately, it is impossible to collect everything. Therefore, data prioritization needs to occur. Before that prioritization happens there needs to be a clear understanding of how the data will be used. This will require increased communication between the science centers and management bodies. This should include periodic reviews of research priorities so that the management system can leverage partnerships with other institutions such as NGOs and academia that may look to those priorities when applying for funding. Discussions around priorities will also inform the other main ideas from this theme. For example, coastwide collaboration will be improved by considering what data is essential to collect during fisheries surveys and the shovel-ready projects to improve fisheries dependent data would also align with priorities.

Potential Actions Identified Across Breakout Groups for Data Sources and Partnerships (Non-Prioritized)

As discussed in Section 3, following the three breakout groups, Core Team members consolidated the concepts discussed into eight primary ideas for data sources and partnerships. These ideas were primarily centered around the main questions that were considered but were not presented in a way that required participants to make “this/not that” determinations. The dot voting was used to illustrate preferences for which actions should be investigated further in the shorter-term. The potential actions highlighted in yellow emerged as the top preferences in the data sources and partnerships category.

Data Sources & Partnerships - Potential Actions
Modernize data management to facilitate better sharing of data and prepare for an influx of new data streams (e.g. offshore wind data)
Focus on AI/technology development to more rapidly get data into assessments
Develop a process between management and science organization to prioritize data needs for climate-ready management (e.g., human dimensions data)
Prioritize recreational data collection to reduce uncertainty including developing incentives for better reporting
Hire staff dedicated to fostering partnerships and coordinating data collection/sharing between other ocean users, management bodies, and within Federal agencies
Expand study fleet, include recreational fisheries and ensure data are used, include shovel-ready data projects
Use survey mitigation around offshore wind to transition to industry-based surveys or other survey platforms
Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)

Plenary Discussion: Identifying Preliminary Next Steps

The above highlighted potential actions were the focus of plenary discussion. The group discussed possible mechanisms to move these ideas into the management process.

Expand study fleet, including recreational fisheries, and ensure data are used, include shovel-ready data projects; Prioritize recreational data collection to reduce uncertainty including developing incentives for better reporting

Two of the potential actions that received the most votes for data sources/partnerships were primarily focused on the recreational sector. During the plenary discussion, these two potential actions were discussed in tandem. Recreational catch is an important piece to the story especially with regards to climate change. The recreational sector is often the first to see climate-related changes especially in regions or times where the commercial fleet is not operating. The clear message was to develop a plan for how the data will be used. The idea of a recreational study fleet would be to integrate with Marine Recreational Information Program (MRIP) to decrease uncertainty in its estimates. In order to establish a rec study fleet, the centers, regional office, and councils would need to work together in a partnership to identify priority data needs and establish a pathway for integrating the data into management. GARFO could lay the groundwork for such a partnership in its Recreational Saltwater Fisheries Policy Regional Implementation Plan. The Councils and Commission could follow-up by establishing work plans that use the recreational study fleet data. In addition to the

study fleet discussion, the topic of “shovel-ready” or “ready-to-go” projects were discussed. There are many data gaps that fishermen are willing to help fill but need to be provided the right guidance on what and how to collect data. Science Centers in conjunction with the management bodies could develop a series of projects that could be quickly implemented if funding becomes available. These “shovel-ready” projects should extend to the commercial sector as well.

Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)

The conversation around this potential action can be broken into two main points. The first was around fisheries independent surveys. As noted above, there are many federal and state fisheries independent surveys operating along the East Coast. Many of them use different gears and protocols from one another. This makes it difficult to directly compare survey indices. Standardizing surveys across the coast will not be an easy fix. Any changes to survey protocol could break time series. This is not something to be done lightly and therefore requires a clear vision of how the data would be used. The second point raised during the discussion extended beyond the biological and physical variables and centered around socio-economic data. This data is extremely important but is rarely the focus of data discussions. The need for good socio-economic data may be exacerbated by other ocean users such as offshore wind or catastrophic events such as hurricanes. There are examples of demand models being developed in the recreational sector that could be applied to the commercial sector. Economic models like this can help identify potential business decisions which in turn can inform potential impacts from management decisions.

7. Reflections and Concluding Thoughts

At the conclusion of the Summit Meeting, participants recognized the wide-ranging challenges that climate change poses for the future of East Coast fishery management. Session conversations revealed that climate change intensifies the pressures that fishery managers have been facing for years: limitations in information, the need to balance flexibility and stability, and the best way to promote coordination across organizations. Many of the themes identified are long-standing issues. Climate change has brought an added urgency for them to be addressed.

This meeting generated several ideas, and created a potential agenda for action that can help shape changes to fishery management approaches over the coming years. While the focus of this session was limited to three of the most important themes to address, it was clear that climate change will raise several other issues that fishery managers must deal with.

Regarding the next steps that followed from the Summit, it was agreed that a report of the Summit Meeting (this report) would be presented to the NRCC for their review at their May 2023 meeting. Presentations of the findings from the Summit will also be presented to each of the three east coast Councils and the Commission.

In addition, the Scenario Planning Core Team will also draft a separate document to make specific suggestions on which potential action areas to explore further and their appropriate next steps. Following review and discussion of the elements contained in this "draft action plan" document, the NRCC will determine a path forward.

8. Appendices

Appendix A: Summit Participants

Atlantic States Marine Fisheries Commission

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Michelle Duval
Sonny Gwin
Dewey Hemilright
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Brandon Muffley
Adam Nowalsky
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Jessica McCawley
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NMFS

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Appendix B: Cross-Jurisdictional Governance Breakout Groups Summary and Potential Actions

This appendix attempts to capture a complete paraphrased list of ideas and considerations raised during the brainstorming sessions for the cross-jurisdictional governance theme. These were ideas identified by participants for the purpose of generating discussion and creative problem solving. Not all of these ideas had broad support and in some cases may have had very little support.

Q1. What is the best structure and representation for governance on the U.S. East coast?

- ***Enhance flexibility and adaptability in our governance structure.***
 - There is a general recognition of the need for more flexibility and adaptability in our governance structure.
- ***Evaluate where questions of state vs. federal jurisdiction and authority may need additional clarity or revision.***
 - Additional clarity, definition of roles, and re-evaluation of responsibilities may be needed in some cases for cooperative state/federal management. States and the federal government have different tools at hand with different flexibilities and differing abilities to be nimble and responsive. We are currently taking advantage of these differences as much as possible, by picking which pieces work well for which parts of the process. However, this approach sometimes creates confusion about authority, and we could consider structural changes that make this piecemeal approach less necessary.
- ***There is a need to think more critically about representation needs, both with regard to current concerns and future needs.***
 - What are the current representation concerns and what are they based on?
 - How many tables should there be, and who gets a seat at the table(s)?
 - When we think about representation needs for the future, we tend to think about it in terms of minor changes to current representation, but we should also think about who is currently underrepresented and underserved in our process.
 - We need to be thinking years and decades into the future about which FMPs will need expanded or modified representation. However, we should be cautious when thinking about this because there will likely be representation overlap between different groups which could create inefficiencies.

- *Consider moving away from designing governance around states as the primary unit of representation.*
 - Is it possible to rely less on organization of representation around the state level? It would be difficult to move away from federalism in this system and states would likely not support this; however, we are struggling to address state representation concerns.
 - Perhaps there is a way to better design the system for representing the best interests of the nation as a whole and introduce aspects of decision making that force conversations away from “what’s in it for my state?” One way of doing this may be to integrate more neutral parties into the decision making process.
 - Increasing the number of at-large members could be another approach, and potentially designating at-large members based on affiliations other than states (e.g., stakeholder group).
 - Appointed Council members need to swear an oath under the MSA to manage for the overall benefit of the nation, but state designees do not. Maybe there should be consideration of state members having to compromise more on state interests.

- *Consider consolidating East Coast Councils into one large Council with opt-in species/FMP Boards or committees.*
 - Some suggested one big East Coast Management Council with opt-in participation by states. The full Council would not need to vote on each management plan; the opt-in participation could be at the level of Boards or committees designed to provide appropriate representation based on interest/fishery occurrence.
 - This may provide a system that is more flexible to manage on a species complex or area basis.
 - Expanded committees may be needed under this approach, where there are multiple representatives from each state (similar to the Commission’s Board).
 - Coordination across the East Coast is somewhat built in with this approach, although there would likely still be governance complications with determining appropriate management authority between the federal Council and the Commission authority in state waters.
 - The Council system is likely to become more complex with an expanded number of representatives. It could also change current regional voting dynamics, for better or worse.
 - Finding members to represent more constituents across a broader area, and potentially having to cover more species/FMPs, may be difficult.
 - Depending on how it’s structured, some stakeholder representation and connection to Council members may be lost (see below).
 - Under this type of system, a similar structure could be used for a large SSC, structured with differing representation by stock complex.

- Some would consider this to be a longer term idea to consider if more modest adjustments to our governance structure don't accomplish what we need. In the coming decades, if there is increasing overlap in representation needs, it may be more efficient to consolidate the East Coast Councils.
- ***Consider the important and unique role of the Councils in stakeholder representation when considering possible changes to governance structure.***
 - Fishermen in each region still need Council members who represent them.
 - One coastwide Council, or an expanded Council jurisdiction, could leave stakeholders with less access to their Council representatives and less invested in the process. Fishermen need to know who to reach out to and have easy access to them.
 - However, an ASMFC Board-style arrangement with a consolidated Council could help maintain sufficient regional representation for stakeholders.
- ***Consider changes in state representation on Councils.***
 - Some states serve on two Councils (e.g., North Carolina and Florida) and this could be worth considering for more states.
 - Rhode Island has attempted to get a seat on the Mid-Atlantic Council based on landing more mid-Atlantic managed species than every other mid-Atlantic state. Coastal representation could be balanced by considering changes in voting representation on Councils.
 - Giving states votes on Councils has an advantage over giving liaisons voting rights, as it would allow access to at-large seats.
 - Changing state representation on Councils would require a change to Magnuson and is likely a less flexible/nimble way of changing governance structure.
- ***Consider that representation/changing distributions may not always become a problem worth revising governance structure for.***
 - Many current plans manage a unit stock that extends beyond the Council's boundaries, and some of these are working well and may continue to work well under changing conditions.
 - Solutions that don't require the entire governance structure to change in the same way for every FMP may be more flexible.

- *Reconsider the use of committees across Councils, and reconsider committee representation/structure.*
 - The Councils currently use committees differently. Adding voting members or otherwise modifying representation has more of an impact for some Councils than others.
 - There is a sense that the committee level is where most of the work either gets done or should get done. In other regions, the Council vote is more of a formality because the more difficult work has already been done by the committee. In the South Atlantic this is even more effective with many of the committees presently structured to include all Council members.
 - Councils could modify their rules to give committees more authority. The groups discussed a few different ways this could be done.
 - Simply giving committees the final vote could be accomplished through a Magnuson revision.
 - It also may be possible to change the Council's SOPPs to cede authority to the committees on certain types of decisions. The full Council may still need to vote, but a procedural change could make it so that if the full Council vote fails, the issue is simply returned to the committee.
 - Additional legal guidance may be needed on this issue and the question of whether the full Council would necessarily need to vote on every issue without changes to Magnuson.
 - If relying more on committees, it may be beneficial to consider a more prescriptive approach to committee population. For example, considering the economic importance of each FMP to different states, or having a certain number of committee representatives by state/sector, etc.
 - Representation between the recreational and commercial fisheries would be important to consider on committees for many fisheries as well as state/regional representation.
 - Committee representation would need to be reconsidered periodically as species distributions and fishery characteristics change with climate change.

- *If committees are expanded, consider staff support from multiple Councils to support the work of the committee.*
 - In situations where committees are expanded and the role of the committee becomes more important, it could be advisable to have staff from multiple Councils, or the Commission, providing support to the committee. The lead staff person could be from the managing Council, but involving staff from other organizations could improve support for committee decision making and keep both management bodies in the loop about actions.

- ***Consider voting rights for Council liaisons.***
 - One suggestion was to think about giving one Council a single vote on another Council. This could be done by giving liaisons voting rights, which has been suggested in the past.
 - There was some question whether giving liaisons voting rights would make a meaningful difference in most voting outcomes. Perhaps if the liaisons were the ones making motions it could, but one additional vote does not necessarily have a major impact.
 - Giving liaisons voting rights would require a change to Magnuson.
 - As discussed below under “General Coordination/Collaboration,” the roles of liaisons can be variable in practice and may need to be clarified.

- ***Allow for designation of proxies at the Council level.***
 - The Commission currently allows for the use of proxies in representation, while the Council does not for appointed members. Allowing proxies at the Council level could help alleviate resource and workload issues. Particularly as management evolves to adapt to changing conditions, approaches like more joint management, more frequent committee meetings, and broadening of stakeholder engagement efforts may mean more strain on individual Council members and their families.
 - Allowing proxies at the Council level would likely require a change to Magnuson.

- ***Evaluate Commission-specific structures and policies for potential changes.***
 - The Commission may benefit from more standardized term limits, similar to Councils.
 - Use of proxies could also be reevaluated at the Commission level.

- ***Other Governance Structure Considerations:***
 - There is some inherent tension between increased representation vs. efficiency and nimbleness. The process is in some ways intentionally slow to ensure proper opportunities for public comments and ensure constituents needs are met. Increased representation would likely further slow the process in some respects: the more people you get involved in management by expanding representation, the more inefficient or cumbersome the process could become.
 - Managers should look for ways to move toward less siloed management and permit structures.
 - Evaluations of appropriate governance representation should go beyond where the stocks are distributed in the water, and even where fishermen are catching them. There is also consideration needed to where the people are that are impacted by the fishery, including shoreside stakeholders and businesses.

Q2. When and how should management authority change?

- *Guidelines should be developed for when to start considering a management authority transition.*
 - These guidelines should be specific to initiating a review process to consider whether authority needs to change, and not guidelines for automatically changing management authority. Formulaic assignment of management authority would make governance less flexible.
 - Concern about indicators or triggers that would cause species responsibilities to shift too often, leading to an impractical inefficient system.
 - Indicators or factors to be evaluated should include both biological/ecological information about the species but also social and economic information about the fisheries and associated infrastructure.
 - Even when stock distribution does not appear to be changing, there could be a shift in the fishery's importance to different areas. This is something that could be considered to trigger a review of management authority, but does not necessarily mean that transfer needs to occur.
- *Requests to transfer authority should come from the Councils.*
 - Because of the huge impact to the Councils, a request to change management authority should come from one or more Councils involved (ideally, both Councils involved).
 - A management authority will not always necessarily want to take over management of an FMP, and they should have input in the decision.
 - Councils should also be able to request to give up management of a species.
- *Transfers of authority should be slow and thoroughly considered.*
 - Transition should not occur overnight; an intermediate step such as joint management will likely be needed (though perhaps not in every case).
 - Much expertise and institutional knowledge will be lost in the transfer process and this needs to be considered.
 - It will likely be resource intensive to transition authority, in terms of staff time and potentially in terms of public involvement/outreach.

Q3. How can we improve the efficiency and the efficacy of joint fishery management plans?

- *Clarify definitions of "joint" management.*
 - There are many different configurations of joint management and differing arrangements and procedures. Using clear definitions when discussing joint management changes is necessary.
- *Consider modifications to joint voting procedures.*
 - For some species, sequential voting at separate meetings has produced mixed results, and there are mixed opinions on whether it works well. In some cases, it can cause wasted effort and inefficiencies when two groups disagree (for example, multi-year process to consider an IFQ program for monkfish).
 - In some cases, joint management doesn't feel truly joint where there is a "lead Council," in that decisions often flow from that Council and their SSC.
 - Consider changing voting structure to majority of total members instead of a majority of each group.
- *Consider where some aspects of joint management are currently working well and may continue to work well into the future.*
 - The problem of changing stock distributions isn't necessarily a new one; it is a problem that had to be dealt with in the original setup of the Council system. Some of the joint management plans we currently have may continue to work fine under changing conditions.
 - For some jointly managed plans, it is not clear there is much additional efficiency that could be achieved.
- *Consider where joint management agreements and procedures can be improved and made more efficient, in anticipation of more joint management agreements potentially being needed in the future.*
 - Additional joint management agreements, particularly between multiple Councils, may be needed under future changing conditions. In anticipation of this, it would be wise to review ways to improve joint management agreements and processes.
 - Joint management is currently a process that typically takes up a lot of time and resources. It can be a cumbersome and resource-heavy process. There may be ways to streamlining portions of it.
 - Joint management can also be heavily siloed and it is worth considering ways to break down the siloed approach and have a broader conversation about shared values and objectives.
 - Under a system with more heavy reliance on committees, formation of joint committees between management bodies may improve the efficiency of decision making.

- Increased SSC coordination between joint Council-managed species could also streamline decision making.
- A review of different types of joint management, and comparison of where they might work or not work in certain situations, should also look at other examples such as joint management agreements between the South Atlantic and Gulf of Mexico Councils. Some of these plans appear to be working well by allocating a certain amount of the resource to be managed essentially separately by each Council.
- *Consider degree of influence that one management group may have in comparison to the other management partner.*
 - In some cases, it feels as though one body has more influence than the other. This is often true in the cases where there is a “lead Council” and the other Council usually follows suit with management decisions.

Q4. How can we improve coordination and collaboration among management entities?

- *The role of Council liaisons should be clarified.*
 - The role of Council liaisons is blurry. They should be there to represent what their Council thinks, not their personal opinion, but this does not always happen (and is not always possible, based on the timing of meetings and when issues arise).
 - In some cases, issues come up where the liaisons may not know what the majority “position” of their Council would be, and there is not always time to consult.
 - Clarifying the role of liaisons without adding voting rights would not require a change to Magnuson.
- *Enhance mechanisms for SSC cross-pollination.*
 - Scientific advice may be improved by encouraging more idea-sharing between SSCs.
 - In addition, particularly for jointly managed species, having multiple SSCs weighing in on management decisions in a more coordinated fashion could help increase efficiencies and highlight potential issues earlier in the process.
 - Some existing mechanisms for SSC cross-pollination could be reviewed for application elsewhere in the process, and/or enhanced.
- *“Faction mapping” may help illuminate areas of potential efficiency.*
 - Faction mapping could be used to map out different bodies’ authorities and stakeholders. Where stakeholders overlap, there could be ways to reduce duplicative efforts and create efficiencies.
- *Reevaluate and potentially revise Advisory Panel representation.*

- With changing distributions and changing access to the fishery, as well as changing fishery dynamics, advisory panel representation may need to be reevaluated based on regional/state representation as well as stakeholder group representation. This is particularly true if AP representation has not been revisited for a while.
- Expanded AP representation provides a way for more voices to be heard in the process covering a broader regional extent.
- As noted above under Governance Structure & Representation issues, there is a need to better represent underrepresented and underserved communities on our Advisory Panels.
- In some cases it has been a struggle to achieve adequate representation when populating Advisory Panels. Increased use of webinar meetings and other virtual tools may be one way to broaden the universe of potential advisor input.
- However, it is also worth thinking about circumstances under which expanded representation may or may not actually be needed. For example, if a species distribution is changing, it may not be necessary to increase advisory representation until the importance of that species to the local community reaches a certain threshold.

Other Governance Issues

- *The complexity and disconnected nature of the East Coast permitting structure is a governance and management issue that warrants further consideration.*
 - Intersecting with management is the issue of permit silos. Many participants would like to make it easier to acquire permits in different fisheries. This needs to be weighed against the continued need to limit capacity in many fisheries.
 - Many hold permits that they are having to travel further distances to use. They may wish to get out of moving fisheries and into another fishery, but are limited in their ability to do so due to permit structure.

Appendix C: Managing Under Uncertainty Breakout Groups Summary and Potential Actions

This appendix includes the considerations and potential actions we heard during the managing uncertainty breakout groups. We did our best to include the ideas we heard during the breakouts. The ideas are grouped according to guiding questions, presented prior to the breakout discussions, and by potential action.

Q1: How can we increase flexibility, adaptability and robustness in management?

- There is a need to define the terms flexibility, adaptability, and robustness to ensure common understanding and goals.
- We need to better understand risk. Risk includes the probability that something will happen combined with the consequence if it happens. Many Councils/NMFs are not looking at risk this way.
- Looking at what is achievable is also important.
- Too much flexibility could lead to large swings in management from year to year and that could be detrimental as businesses need stability for planning.
- In all of these situations, good communication and transparency about the process will be key.

Identify and establish best practices for if/then trigger management.

- If/then trigger management describes a process where specified information is collected (stock, environmental, or other conditions), monitored, and when a specific threshold or trigger is met or passed, a pre-identified management response is implemented.
- This (if/then trigger management) will reduce administrative workload associated with implementing changes to fishery management actions, since the actions will have been previously analyzed and/or could be implemented directly by the NOAA Regional Administrator.
- This will also reduce flexibility in how management responds (and will not be able to account for other factors that may be important such as availability of alternative options).
 - Could if/then situations be created to allow some flexibility in response?
- It can be difficult to envision future conditions and set up if/then triggers.
- The tool assumes NMFS/Councils will know when a trigger has been met.
- Could qualitative information from fishermen or other sources be incorporated into the evaluating whether triggers have been reached?
- This tool already exists; there are allocations set up this way.
 - For example, the Bering Sea and Aleutian Islands FMP includes pre-arranged "if/then" allocations for yellowfin sole between two sectors depending on the total allowable catch (TAC). If the TAC for the two

sectors is greater than 125,000 metric tons (mt), then the first sector is allocated 60 percent; if the TAC for the two sectors is less than 125,000 mt, then the first sector receives an increasing apportionment.

- Another example is closure thresholds: if a given percent of the ACL has been caught, then the trip limit decreases.
- The lobster fishery has created a rule that if recruitment is below a given amount, then the fishery automatically changes gauge size
- Suggestions on how these if/then triggers could be added to existing processes were:
 - MAFMC could add triggers to their risk assessment process;
 - Triggers could increase responsiveness when there is joint management across multiple Councils;
 - Triggers could be tied to ABC control rules;
 - Could identify ecosystem level triggers that monitor larger ecosystem processes.
- The NE and Canada have an example system of adapting catch allocations for shared stocks based on historical and current distribution.
 - This system is not perfect as there can be large swings in TAC between surveys and distribution shifts.
- Communication on triggers, why they are important and why changes are needed when triggers are met, is important to improve fishermen compliance with the regulation and add transparency to management. Could fishermen provide input on the scale of the response?

Look into streamlining NEPA compliance and documentation.

- Could NEPA Programmatic Environmental Impact Statements decrease response times for management?
- Could the ASMFC concept of conservation equivalency/functional equivalency be implemented for a faster NEPA process?
- Supplemental Information Reports could be used more frequently for compliance with NEPA, when an action builds directly upon prior actions in that fishery management plan, the measures being suggested are typical of the FMP, and stock and fishery conditions have not changed substantially.
- Consistency in NOAA General Counsel guidance across all regions could be helpful.

Include spatial considerations in management.

- Could variable management across an area be considered (a geographic approach)? For example, decreasing or increasing fishing pressure at the edges of a population?
- Could we identify stock status (overfished, subject to overfishing) by regions?

Other comments related to increasing flexibility, adaptability and robustness in management.

- Learn from other Councils.
 - For example, MAFMC has streamlined their specs process to 1 meeting and 1 vote.
- NMFS and Councils should better account for size and age structure in monitoring and management decisions.
- Councils need more socio-economic information to make better management decisions.
- Think outside the box, for example, how could this idea tie to EBFM?
- There were a few comments on the need for better reporting from all fishing sectors, especially the recreational sector
 - There are participants willing to share their data, but they need a structure to do this.
- Different Councils have heard different advice on the use of EC species and what constitutes management action. Consistent advice is needed.

Q2: How can we better accommodate uncertainty in the stock assessment process and address related management challenges?

Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts).

- Risk policies are different from risk assessments; both could be useful, but only risk policies are discussed here.
 - A risk policy articulates the bounds of how risk tolerant or risk averse an organization's management approach is, given certain criteria. Though informed by scientific advice, risk tolerance is ultimately a policy decision.
- A risk policy could be useful for determining what climate-related risks (and failures) would be acceptable.
- Councils approach risk policies and uncertainty buffers differently.
- It could be useful to categorize risk as long term vs. short term risk, as the management response may be different depending on the temporal outlook.
 - In the NE there is a tendency to look at short term risk to businesses and ignore long term adverse effects.
- There was agreement that comparing risk policies from all the Councils, including how they account for uncertainties due to climate would be useful.
 - NEFMC hired a contractor to prepare a report with this information for all Councils. It will be released in spring 2023.
 - ASMFC has a draft risk policy that includes information on climate concerns and information on economic importance that can decrease or increase catch levels, respectively.
 - SAFMC has an ABC Control Rule that is complicated. It seems subjective because uncertainty varies between stocks.

- There was interest in having more consistency in the risk policies across the different management bodies. Some felt consistency was needed and others thought the differences were appropriate. All agreed that inconsistencies will create challenges when stocks move across jurisdictional boundaries, especially if the Council in charge of the fishery management plan changes (see governance discussion).
- There was concern that some existing risk policies only result in a decrease in catch (i.e., they increase uncertainty buffers), and that there is no mechanism for increasing catch (i.e., decreasing buffers) for species showing positive responses to a change in climate.
 - We need a tool to identify species doing well and take this account within a risk policy.
 - We have F_{rebuild} and F_{MSY} . Can we add a new F for stocks doing well? For example, if $B/B_{\text{MSY}} > 2$, implement the higher F because of low risk.
 - Black sea bass are doing well but fishermen are not getting to take advantage of this. They feel like fishermen are being held accountable, but management is not being held to be accountable.
- Is there a way to influence SSCs to take more risk?
- When there is a required cut in catch, the response should be tied to the level of certainty, and anecdotal information should also be considered.
- In order to improve our understanding of risk, we could track risk, decisions, and consequences to better learn from past decisions (i.e., use adaptive management). This could be applied to both science and management decisions.
 - For stock assessments, we can improve our understanding of risk by looking at the history of assessments and retrospective variability.
- Results from NOAA's species and habitat climate vulnerability assessments could be used to identify species that have higher or lower risk of climate impacts.
 - For the Northeast, a crosswalk of the habitat and species assessments was recently completed that merges the findings of both assessments into a single evaluation.

Consider risk assessments to identify fisheries at risk of not meeting management goals

- Risk assessment is a systematic process of evaluating potential risks involved in an undertaking, including the probability that an outcome might occur and the severity of the consequences.
- Risk assessments can combine qualitative and quantitative information.
- Risk assessments help identify scientific and management priorities
- When you look at risk, the risk to the resource and risk to the permit holder should be discussed.

Move toward robust management options rather than trying to account for all kinds of uncertainty within stock assessment models.

- Consider moving toward dynamic reference points that adjust to account for current environmental conditions. There should be the expectation that as management adjusts to this new tool, there will be some failures before successes.
 - Use ecosystem and environmental information to inform appropriate dynamic reference points; use trial and error to ID systems that work.
- Accurately measuring uncertainty is hard if not impossible. Are there better ways to measure uncertainty?
 - One idea is to consider historical assessment variability rather than trying to quantify all forms of uncertainty.
- Could other information (habitat availability or condition, predator and prey information) be considered, especially in situations where there is a disagreement on the status of a stock?
- Management strategy evaluations (MSEs) can be used to identify management options that are robust to multiple possible future conditions.
 - Guidelines on how to focus MSEs could be useful.
 - There are other forms of structured decision making (similar tools to MSEs) that could be useful.

Use qualitative information to improve our understanding of risk. Specifically, better incorporation of local ecological knowledge into management is needed.

- Results from climate vulnerability assessments could be used to identify species that have higher or lower risk of climate impacts.
- NMFS and Councils could also explore participatory modeling that includes what fishermen are seeing on the water ([good example from Gulf of Mexico](#))
- Fishermen can also collect data to clarify conditions on the water as they have done for [red tide in the Southeast](#)
- North Pacific Fisheries Management Council uses [risk tables](#), a standardized framework to document concerns about the assessment model, population dynamics, and the ecosystem/environment that are not explicitly addressed within the stock assessment model. A qualitative scoring procedure is used to evaluate the severity of the concern.

Consider and clearly communicate intricacies of uncertainty when making policy/ changing management

- Not all risk is the same, and it can depend on the type and characteristics of uncertainty.
- The type of uncertainty matters.

- A large uncertainty in fishing mortality might be more important than uncertainty of the utilization of a stock, especially in situations where there is certainty that the stock is improving.
- More nuanced communication about the type of uncertainty is needed
- Characteristics of the uncertainty also matter.
 - For example, with a 2 tailed distribution- is uncertainty bigger in one direction vs. the other? Are both tails being considered? A highly skewed understanding of uncertainty could mean there were large consequences for a wrong decision one direction but not the other and this should influence decisions.

Other Comments related to improving our ability to account for uncertainty in management:

- Simulations could be used to better understand and communicate the risks associated with management decisions
 - There was concern that the high workload on assessment scientists would mean simulations will not be prioritized.
- If management does not account for current conditions, we could be aiming for rebuilding that is not possible. If we can show fishing is not the reason for a low abundance, then we can look to other management responses.
- Consider moving from the concept of maximum sustainable yield (MSY) to the concept of pretty good yield as it can provide more flexibility in its use
- ICES has started providing scientific advice on MSY as a range, with other factors (such as known uncertainties) driving what part of the range is used for management.
 - This would require careful adherence to a risk policy, so that management bodies could avoid consistently picking the highest number on the range.
- There were suggestions to better integrate considerations of scientific and management uncertainty (vs considering them mostly separately as is currently done).
- How do we deal with situations where the stock assessment was not approved. The Council needs the ability to do something in these situations.
- For stocks where we are lacking relevant survey information, what other information can we track? CPUE? An EBFM indicator? There was a suggestion that we need to decide in advance what will be used to make decisions.

Q3: How can we improve the ability for fishermen and other stakeholders to adapt to climate change?

Creating a more adaptable structure for fishing permits. Fishermen need the ability to change target species or locations in order to adapt to changes in environmental conditions and fisheries. Right now permits, permit systems, and

required reporting differ between Councils and between fisheries. Creating consistency in the permit system could allow for permits to be adjustable as stocks move and target fisheries change.

- Possible steps in this process include:
 - Compile information on permits across the entire East Coast.
 - Assess diversity of permits (who holds them, where, in what combinations)
 - Assess permit accumulations
 - Identify where there are limits in flexibility for fishermen.
 - Identify easy changes
 - Address coast-wide permit issues
- Easier wins were identified:
 - Splitting permits
 - Adding emerging species to existing permits
 - Removing historical moratoria on permits
 - Remove requirements to bundle permits that may no longer make sense and should be reconsidered.
- There is a need to consider and assess the community component of permits (who holds permits, and how changes impact communities) and track the accumulation of fisheries permits through time.
- There was concern that changing gear restrictions could increase uncertainty if this brings in latent effort.
- Different permits have different reporting requirements, which is challenging to fishermen.
- Permits are a difficult subject to address, given the financial investment many fishermen have in the existing system.
 - Should fishers granted permits/quota be treated differently than those who invested heavily in the permits/quota?
- Fishermen are concerned with “blowing up” the existing system. The combined impacts could impact uncertainties; so any changes should be tested with small changes first.
- If changes to permits are being considered, the capacity of a fishery should be considered as there are some fisheries that cannot add new capacity.
- It is easier to adjust permits when there are not state by state allocations. State IFQ programs also create less flexibility
- Larger changes in permits were also suggested, such as switching from species specific permits to area based permits (as the NEFMC eFEP contemplates), and switching from state permits to a universal federal permit that would adjust to species distribution and abundances (for charter boats).
 - When discussing a shift to area based permits, the tendency for fishermen to target high value species would need to be considered to ensure this does not create more choke stocks.
- Sub-regional permits could be used to address shifting stocks. There could be a stepwise approach to adding species to permits. For example, adding black

sea bass to lobster permits to allow lobster fishermen to land bass that are caught in the lobster traps.

Identify and remove institutional baggage. Some existing rules that limit the flexibility to respond to changes in fish stock abundance and distribution may no longer be needed or relevant. Councils should identify and remove this “institutional baggage”. Ideas include removing:

- Restrictions on what gear can be used to fish what stocks
- Permit bundle requirements
- Restrictions on using one gear per trip
- Trip limits
- Mis-match of mesh sizes across fisheries (e.g., flounder and black sea bass)
- Limitations in endorsements (e.g., cannot crossover between pot and longline)
- Other legacy regulations

There was also discussion of shifting towards different means of conducting fishery-independent surveys. NEFSC is considering these issues under the [Northeast U.S. Region Federal Survey Mitigation Strategy](#).

Improve the use of community vulnerability assessments.

- Climate change will likely create winners and losers. Are there management changes we can implement that will ensure everyone survives?
- Councils need more socio-economic information to better understand fisher needs

Other comments on improving the ability of fishermen to respond to changes:

- Increasing diversity of catch can increase stability and resilience of fishermen. However, specialized gears can make change hard. How can we incentivize diversity?
 - Potential action: Create a program to support diversification (gear, fisheries, etc.)
- Fishermen need stability. Large swings in management or catch limits are difficult for fishermen and processors.
- Economics (for example, gas prices) impact the ability to follow the fish.
- Commercial infrastructure is also important.
 - Loss of working waterfronts decreases options for where fish can be landed.
 - Sea level rise is also impacting these businesses
 - Could fisheries move to offshore infrastructure?
- Councils need to identify a better mechanism for managing emerging fisheries.
- Increasing market certainty could help with fishermen’s ability to address other forms of uncertainty. For example, adding a market for an invasive species increases market certainty that may help fishermen deal with the ecosystem impacts of that invasive species.

Appendix D: Data and Partnerships Breakout Groups Summary and Potential Actions

This appendix includes the considerations and potential actions we heard during the data and partnerships breakout groups. We did our best to include the ideas we heard during the breakouts. Participants used post-it notes to bring ideas to each guiding question. The ideas are grouped according to guiding questions, presented prior to consolidation, the breakout discussions.

Q1. How should we prioritize data/information needed to manage in a changing environment?

- Develop a process between the NRCC and SEDAR to prioritize data (Use ACCSP as example)
 - One participant noted that the NRCC does not have control over data collection and this should not be pursued.
- Implement better coordination between federal and state recreational permits
 - Then collect data
- Reduce uncertainty in recreational data for species with high recreational catch and effort.
- Shift standard recreational survey to a directed survey.
- Use eDNA for gut content analysis
- Incentivize better reporting both recreationally and commercially.
- Start a conversation about data storage with regards to offshore wind instruments
- Consider data management in addition to data collection.
- Expansion of ocean monitoring systems (e.g., IOOS) regionally.
- Work to better understand what environmental data is needed to improve assessments.
- Evaluate how existing fishery dependent and independent data have been used, then refine and streamline.
- Compatibility and continuity of fishery independent surveys with different gear types.
- Standardize data collection requirements across jurisdictions. States often have less robust data standards, but more flexible regulator requirements.
- Standardize and expand cross-jurisdictional surveys.
- Paperwork Reduction Act could be a barrier for nimbleness.
- Increase communication between science centers and states (e.g., through workshops) and have the group identify data holes and what is not used.
- Be ready to prioritize, say “no”, and/or stop some projects to ensure resources are available for this effort.
- Require finer-scale catch reporting (10-minute square or better)
- Prioritize and develop:
 - Data standards/methods that can be useful for ecosystem management.

- Standards for government, education, and other ocean user development.
- Identify training opportunities for fisheries managers to learn/experience why human dimensions data is important to decision making.
- Prioritize human dimensions data (how people feel about changes/identity/etc) in grant opportunities (S-K, FIS, ACCSP), etc.
- Comprehensive habitat mapping is needed to EBFM and monitoring species' range (contraction/expansion)
- Review the huge list of research needs
 - Sort out those related to climate change and identify gaps.
 - Prioritize those data needs.
- Review ACCSP mode of prioritizing data.
- NRCC and SEDAR initiate a conversation on what can be done and what we can stop doing. New high-level commitment.
- Need to expand the recreational demand model to the commercial sector and up/down the coast.
- Develop a message around why we are prioritizing data
 - Helps with incentives to provide data.
- Use legacy environmental and survey data to make retrospective forecasts of changes in stock distribution to determine which data elements are key in making future predictions.

Q2. How can we use current funding more efficiently?

- Current funding:
 - We cannot prepare for the future with current funding.
 - Need to bring congress into conversation.
 - Combine partnerships with new developing ocean users.
- Expand and utilize technology more.
- Expand current use of environmental data loggers, etc, consistently across the coast of industry vessels (better utilize industry and current funding).
- Centralized, cloud-based data management system.
- Determine if all current funding is still useful and redirect or develop cheaper technology.
- Require environmental monitoring stations on wind turbines
- Plan to fully implement A.I. solutions for data collection and data analysis.
- Partner with NGOs in prioritizing funding decisions, i.e., use fisheries climate change priorities in proposal ranking.
- Conduct modeling to determine how best to “knit” together different existing regional surveys.
- Prioritize data collection in areas, sectors, and gears where uncertainty is highest.
- Strategic planning coastwide for projects and data needs to identify efficiencies.

- Expand study fleet and citizen science approaches consistently across the coast and identify the data/questions each approach is most appropriate for to collect more real-time data.
- Review and collect existing data streams not traditionally used.
- Transition to more efficient sampling methods (drones, gliders, eDNA, etc)
- Right size data collection (if we subsample otoliths, we have collected too many)
- NMFS should be more organized in terms of our programmatic needs and priorities.
- Management needs should drive data needs, not vice-versa.
- Maximize relevant data collection from existing surveys.
- Breakdown geographic barriers, i.e., NEFSC vs SEFSC
- Unified collection (standards) and centralized data management.
- Work with states and feds to standardize gear/collection methods.
- NMFS/states should review long-term fishery dependent surveys and assess their current usefulness and decide to stop doing surveys based on the results of the analysis and reprogram funds.
- Stop building ships to skiffs, i.e., replace white ship fleet.
- One permit system.
- Standardize data collection along the coast (state and fed).
- Clean house of people who do not do their jobs.
- Use for-hire fleet to assist in spatial scale data to assist in the Albatross/Bigelow surveys.
- Partner with organizations that would benefit from serving as a platform for data collection, e.g., USCG, DOD, pilot training, schools, merchant marine academy, marine technical schools.

Q3. How can we better utilize the fishing industry for data collection?

- Collect data to calibrate catch composition with temperature.
- Recreational study fleet
- Reduce size of statistical areas to generate finer, more accurate scaled data.
- Study fleets: (recreational, commercial) use as priors on existing data sources.
- Turn losers, non-reporting, recreational tilefish permittees into data collection instead of fines/sanctions
- Consult a professional outreach expert/firm.
- Actually use stuff, study fleet.
- Ensure whatever is collected is actually used.
- Deploy environmental sensors on fishing vessels.
- Invest in temperature sensors/CTDs and put them on as many boats as possible.
- Better commercial fisheries monitoring, i.e. 100% ASM in NE Groundfish.
- Expand and create RSA programs, e.g. Scallop RSA. Be very thoughtful of program design.

- Use the for-hire fleet
 - eVTRs: Temperature, length of trip, lat/long
- Use fishing vessels as platforms (moorings, temperature, manual observation, eDNA)
- Cooperative/Collaborative research
- Scientific effort to merge/use data from different scales and sampling designs.
- Incentivize data collection. Hybrid fish for science/commercial fishing.
- Trust that the fleet can collect scientifically valid information.
- Tell the industry what you need and work collaboratively to get it.
- Expand the study fleet.
- Begin transitioning current large-vessel government vessel surveys to industry platforms.
- Create an example of how data will be used.
- Create incentives: explain why data is needed, how it will be used and how it will benefit science/management.
- Citizen science reporting for the recreational fishing sector.
- Citizen science and cooperative research. NMFS should increase funding and have a larger role.
- Expand the study fleet and recognize that not every fisherman is cut out to be a study fleet participant.
- Create flexibility and opportunities for fishermen who pitch in to collect data.
- Inclusion of collected data in the stock assessment process along with greater transparency and flexibility in the incorporation.
- Create a number of incentives for fishermen to participate in data collection.
- Utilize fishing industry:
 - First determine what to collect as a harvester (what is needed)
 - Outreach on how to best collect with industry.

Q4. What are the best ways to foster outside partnerships for sharing data, especially with other ocean users?

- Create more regular, structured coordination across relevant Federal organizations for data collection, science, etc.
- Approach well-funded foundations who are about oceans and climate change (not just Federal funding)
- Better prioritize applied research.
- Clearly define how the data are going to be used.
- Be wary of wind farms. They do not have a vested interest in the future of our environment.
- Seek mutually beneficial projects. Each party must benefit somehow.
- We have data. What do we do with it based on climate change?
- How will we use new data?
- Leverage universities to develop stock assessment models for added capacity.

- Use wind turbine money to fund surveys but the surveys are conducted and overseen by NMFS.
- Full-time staff with coordination roles to focus on communication.
- Use OSW turbines as platforms of opportunity to collect species distribution data.
- Foster data sharing:
 - New ocean users collecting standard data in elements partnership.
 - Develop recommendations on what is to be collected.
- Define data gaps and needs, then coordinate with other Federal agencies to determine whether data needs can be met. Is data already available?
- Identify other users and ask for data contributions.
- Collect the right data, not just more data.
- Actually use the study fleet.
- Host a forum of known established partners to discuss what is available and data gaps.

Appendix E: Prioritization Exercise Detailed Results

This appendix provides the detailed breakdown of voting from the prioritization exercise conducted on Day 2 of the meeting (as described in Section 3). Based on the Day 1 discussions, Core Team members finalized a list of potential actions for each theme. These actions are listed and briefly described in the three tables in the body of the Summit report (Sections 4-6). Summit participants were asked to prioritize the potential actions in the following way. Everyone received eight votes in the form of dot stickers. Dot stickers were color coded according to each participant's affiliation, with additional labeling for attendees who are members of both a council and ASMFC. Votes could be allocated across any of the potential action areas in any of the themes, but participants could not vote for the same potential action more than once.

Participants were asked to consider prioritizing:

- Potential actions that will help fishery managers prepare for and cope with the challenges of climate change;
- Potential actions that fishery managers are able to influence, and
- Potential actions that are feasible to implement, or where some progress can be made.

Cross-Jurisdictional Governance

Governance Potential Actions	Total
Move to more consistent use of committees across Councils; re-evaluate Committee representation	25
Evaluate mechanisms for cross pollination of SSCs	17
Committee-based decision making with changes to Council SOPPs (Committee motions not approved by full Council get sent back to Committee)	17
Improve coordination across NOAA Offices	13
Coastwide council with opt-in representation by FMP based on fishery interest	12
Clarify and potentially expand the roles of liaisons between Councils	11
Change state representation on councils	8
Review efficiency/effectiveness of joint management plans along coast	8
Re-evaluate and potential revise Advisory Panel representation	4
Committee-Based decision making where Committee has final vote (does not go back to full Council)	1
Consider allowing proxies at Councils to alleviate workload issues	1
Develop more explicit agreements for joint FMPs	1
Total Cross-Jurisdictional Governance Dots	118

Figure 1: Summit dot voting totals for Cross-Jurisdictional Governance. These vote counts represent the total dots received for each potential action, and do NOT reflect double counting of those representing more than one management body.

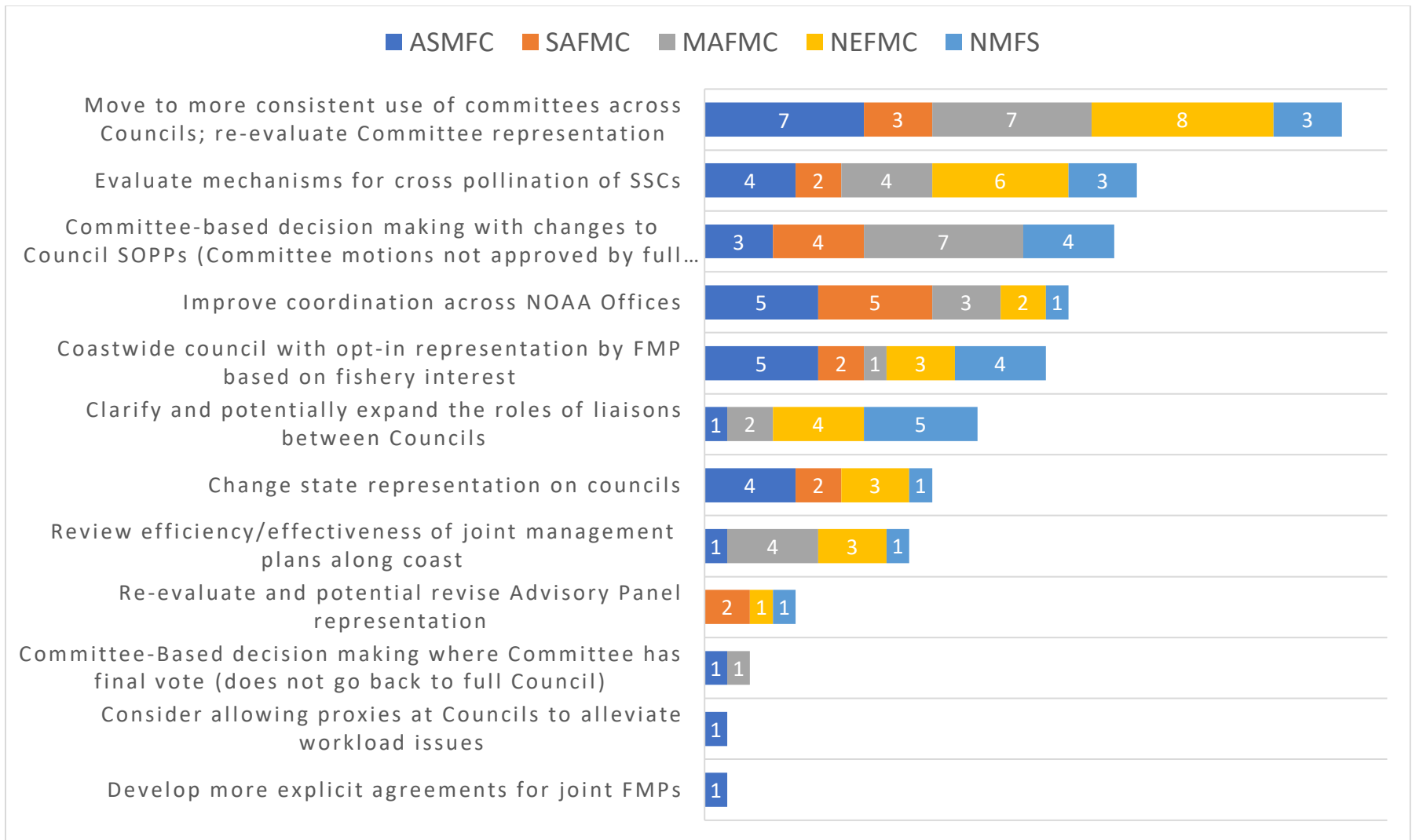


Figure 2: Summit dot voting results by management entity for Cross-Jurisdictional Governance. These results are intended to show interest by management body and therefore reflect double counting of those representing more than one management body. Totals will not add to those shown in Figure 1.

Managing Under Increased Uncertainty

Management Uncertainty Potential Actions	Total
Improving and better operationalizing risk policies	29
Move away from trying to model more and more uncertainties	25
Include spatial considerations in management	18
Identify/establish best practices for if/then management	14
Improve use of community vulnerability analyses	10
Look into streamlining NEPA compliance & documentation	8
Compile information on permits across entire East Coast	7
Consider risk assessment = meet management goals	5
Identify institutional baggage	4
Consider intricacies of uncertainty when making policy/changing management	2
Total Managing Under Uncertainty Dots	122

Figure 3: Summit dot voting totals for Managing Under Increased Uncertainty. These vote counts represent the total dots received for each potential action, and do NOT reflect double counting of those representing more than one management body.

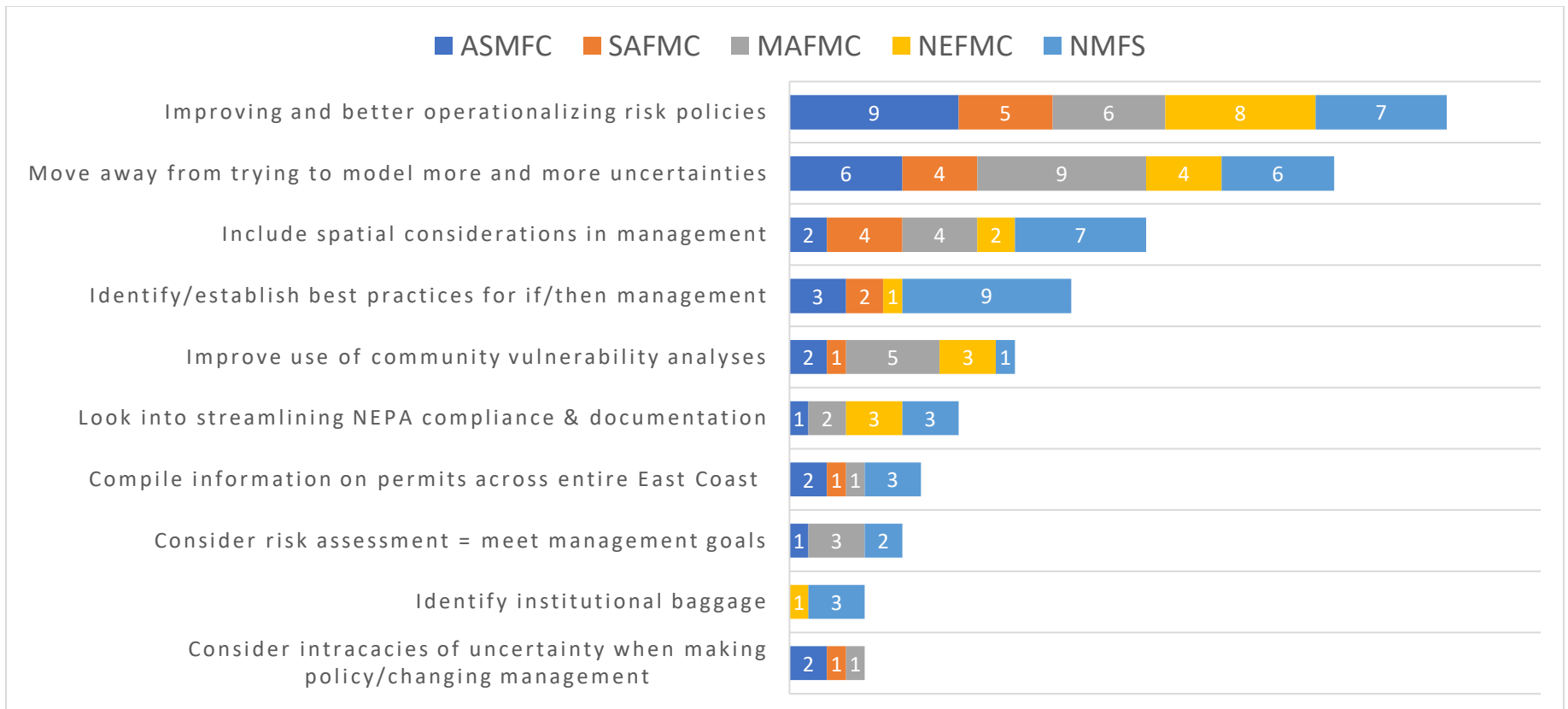


Figure 4: Summit dot voting results by management entity for Managing Under Increased Uncertainty. These results are intended to show interest by management body and therefore reflect double counting of those representing more than one management body. Totals will not add to those shown in Figure 3.

Data Sources and Partnerships

Data Sources and Partnerhips Potential Actions	Total
Expand study fleet, include recreational fisheries and ensure data are used, include shovel-ready data projects	26
Prioritize recreational data collection to reduce uncerainty including devleoping incentives for better reportng	25
Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)	24
Modernize data managment to facilitate better sharing of data and prepare for an influx of new data streams (e.g. offshore wind data)	16
Use survey mitigation around offshore wind to transition to industry-based surveys or other survey platforms	16
Focus on AI/techn development to more rapidly get data into assessments	5
Develop a process between management and science organization to prioritize data needs for climate-ready management (e.g., human dimensions data)	5
Hire staff dedicated to fostering partnerships and coordinating data collection/sharing between other ocean users, management bodies, and within Federal agencies	1
Total Data Sources and Partnerships Dots	118

Figure 5: Summit dot voting totals for Data Sources and Partnerships. These vote counts represent the total dots received for each potential action, and do NOT reflect double counting of those representing more than one management body.

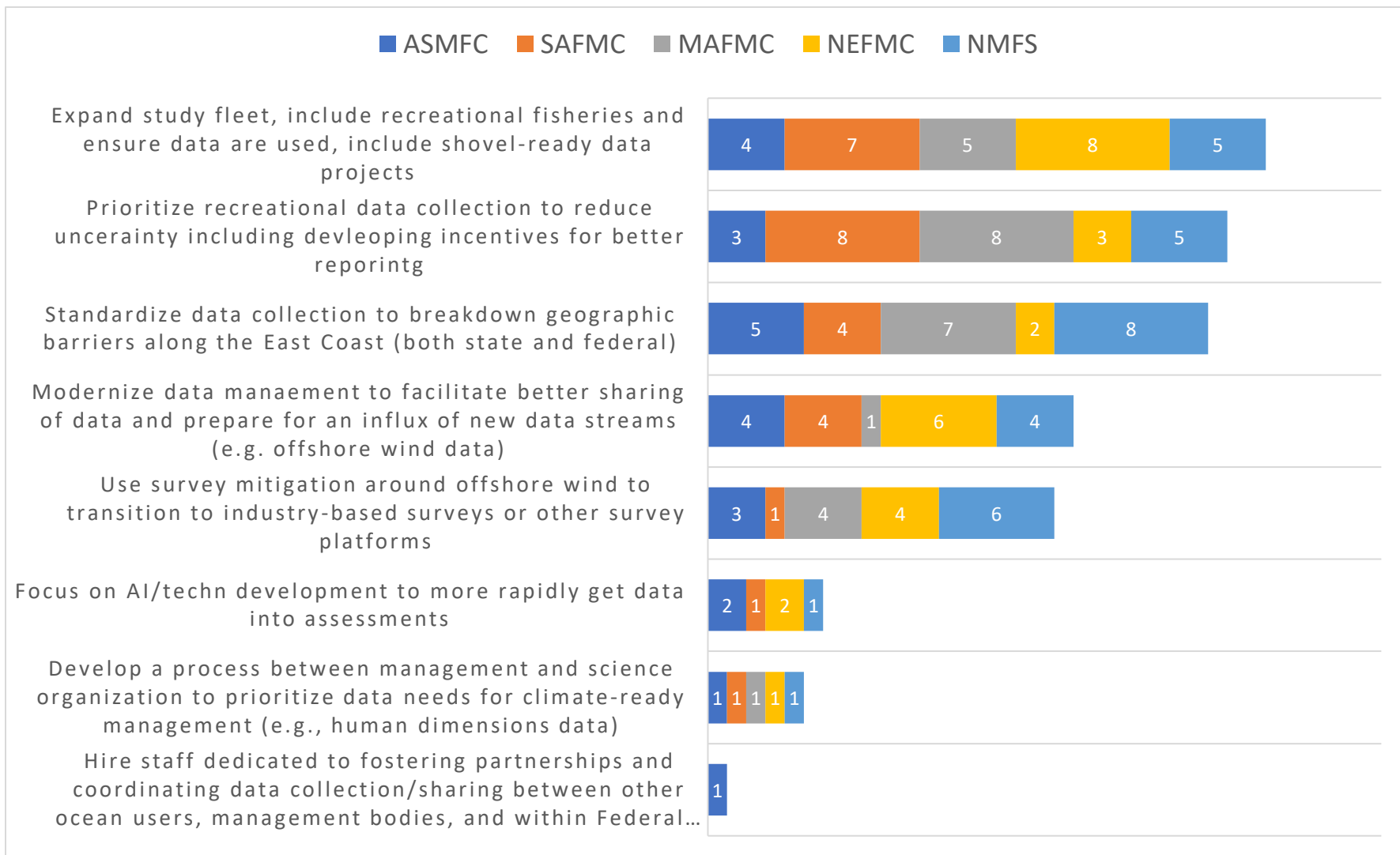


Figure 6: Summit dot voting results by management entity for Data Sources and Partnerships. These results are intended to show interest by management body and therefore reflect double counting of those representing more than one management body. Totals will not add to those shown in Figure 5.



Introduction

The U.S. East Coast Fishery Management Councils (Councils, New England, Mid-Atlantic, and South Atlantic), the Atlantic States Marine Fisheries Commission (Commission), and the National Marine Fisheries Service (NMFS) conducted an East Coast Scenario Planning Initiative to explore jurisdictional, governance, and management issues related to climate change and fishery stock distributions. Representatives from these fishery management organizations have worked collaboratively and engaged diverse stakeholders to explore how climate change will affect fishery management. This exploration was based on a multi-stage scenario planning process, where stakeholders generated several different possibilities for how climate change might affect east coast fisheries.

East Coast Scenario Planning Summit

The capstone to this initiative was the East Coast Scenario Planning Summit, held on February 15-16, 2023. It was attended by representatives from each of the organizations identified above. The goal of the Summit was to develop a set of potential governance and management actions resulting from a scenario-based exploration of the future. It was not possible for the Summit to cover all the issues raised throughout the scenario process. Instead, focus was placed on three overarching themes: Cross-Jurisdictional Governance, Managing Under Increased Uncertainty, and Data Sources and Partnerships. A report of the Summit meeting proceedings is available at: https://www.mafmc.org/s/ECSP-Summit-Report_April-2023.pdf.

As described in the Summit report, participants discussed ideas already generated throughout the process, reflected on them, and added new ideas for potential actions. The core team then grouped comments and ideas raised by participants into potential areas for action. After a prioritization exercise, Summit participants identified potential practical next steps for a limited number of ideas under each of the three themes. There was not time to develop practical next steps for all potential actions that generated some level of support.

Role and Structure of Potential Action Menu

This potential action menu reviews the actions identified at the Summit and suggests possible next steps beyond what could be considered at that meeting. In some cases, the core team has taken the list of potential actions from the Summit and consolidated those with similar themes and would have similar next steps. Thus, the list of potential actions in this document does not always align completely with those in the Summit report. Each potential action includes multiple next steps items.

The Northeast Region Coordinating Council plus the South Atlantic Fishery Management Council leadership reviewed all the potential actions and prioritized them into three levels (high priority, medium priority, and parking lot). A full list of potential actions by priority level can be found in the Appendix.

High priority potential actions are those that could be quick wins and/or that the NRCC working with SAFMC leadership viewed as important issues to address in the near term. Some of these actions

include next steps that are already underway. The medium priority potential actions (also referred to as the 'watch list') are also important issues but could take more time or resources to address. These were viewed as less immediately actionable or less of a priority for immediate allocation of resources compared to the high priority issues. Some high priority actions include next steps with a mix of priority levels. The parking lot highlights ideas that are a lower priority or infeasible to pursue at this time. The purpose of this section is to hold on to some of the Summit ideas for possible future reconsideration as conditions change and as our management systems and technology continue to evolve.

The action menu is intended to be an evolving document, used as a planning tool to guide development collective and individual priorities, and a place to capture future issues and ideas. It is not the intent that individual management bodies would necessarily approve or endorse this document in full, and not all potential actions will be appropriate to apply universally. Some may be relevant for only certain areas, management bodies, or FMPs, while others would need to be applied consistently or developed cooperatively to be effective. Many of the ideas discussed below are explicitly about coordination between organizations and would require collective prioritization and the cooperation of multiple management entities.

Thematic Work Areas

The potential actions in this menu are grouped according to the three themes discussed at the Summit: 1) Cross-Jurisdictional Governance; 2) Managing Under Increased Uncertainty; and 3) Data Sources and Partnerships.

Theme 1: Cross-Jurisdictional Governance

Environmental changes are expected to continue to modify the distributions of many fish stocks due to range expansions, range contractions, or shifts in distribution. These changes will pose challenges for current governance structures and arrangements, which were mostly established under the assumption that stock locations would remain relatively stable over time. The scenario planning process considered the ways in which governance structures and processes may need to be modified to address changes in species distributions and other conditions.

Identify improvements to structure and representation for governance on the U.S. East Coast

Many regional and state representation concerns have been exacerbated by changing fish distributions. In addition, the complexity and sheer number of organizations participating in the management process on the East Coast can pose challenges for adapting to changing conditions. The scenario planning process provides an opportunity to re-evaluate the current governance structure to consider alternatives that may work better under changing conditions.

Identify guidelines for when and how management responsibility should change

Rather than addressing this on an ad hoc basis, consideration should be given to under what circumstances, and by what process, management responsibility may need to be shifted or merged.

Improve the efficiency and the efficacy of joint fishery management plans (FMP)

Joint FMPs may become more common under changing conditions and fish distributions. Because joint FMPs can be more complex or less efficient than those managed only by one entity, it will be beneficial to explore ways in which joint management can be more efficient and effective.

Improve coordination and collaboration among management entities

Aside from joint FMPs, there is a spectrum of ways different groups coordinate with each other to develop FMPs and share information. Increased and improved coordination will likely be necessary in an era of climate change and changing species distributions, including improved processes for coordinating management, resources, and information among multiple entities.

Theme 2: Managing Under Increased Uncertainty

In some cases, environmental changes mean historical conditions can no longer be used to predict the future, increasing our uncertainty around appropriate catch limits and management responses. Are there actions that can be taken now to prepare for and respond to this increase in uncertainty?

Better accommodate uncertainty in the stock assessment process and address related management challenges

Changing ocean conditions are affecting the location of fish stocks, the productivity of fish stocks, and the fishing industry's interactions with bycatch, protected species, and other ocean users. Fish stocks could become less productive or move out of range of the fishermen who catch them. In addition, changing ocean conditions also impact the collection and analysis of data used in the stock assessment process. All of this means managers need to be prepared to make decisions with more uncertainty and less clarity.

There are two main approaches to addressing uncertainty in fisheries management: first, increase investment of time and funding into research and science to better understand the situation and potentially decrease uncertainty in predictions (moving towards the right side of the matrix of scenarios), and second, create management approaches with a good likelihood of success even under uncertainty (left side of the scenario matrix). Ideally, implementation of both options is needed to ensure ecosystem, fishery, and community resilience.

Increasing flexibility, adaptability, and robustness in management

The U.S. fishery management process was not designed to be especially nimble as it prioritizes public input/collaborative management. While there are definite advantages to this process, it can be difficult for management to be nimble and responsive to challenges associated with a changing environment. Given that the impacts of climate change could result in surprises in environmental and fishery conditions, creating management that is flexible, adaptable and robust is necessary.

Improve the ability of fishermen and other stakeholders to adapt to climate change

Fishermen and fishing related businesses need to be able to adapt their fishing practices to account for current or expected changes in fish stocks distribution or productivity. Are there management actions that can help fishermen adapt?

Theme 3: Data Sources and Partnerships

One of the key considerations used to develop the scenarios was the predictability of ocean conditions, which includes how well science is able to assess and predict changes in stock production and distributions. Providing stock information and locations hinges on the ability to evaluate accurate and timely data. Coordination between management bodies, federal agencies, academic partners, fisheries stakeholders, and other ocean users will also play a large role as we adapt to changing conditions.

Prioritizing data and information needed to manage in a changing environment

The next generation of stock assessments and the ability to perform climate ready management will hinge on the ability to have the right mix of data/information available to scientists and managers. As we plan for the future, we will need to determine what data and information to prioritize. We will also need to consider what can be accomplished at the national or regional level and what needs to be addressed on a council-by-council basis. Some of the data and information needed will be readily available while others will need a plan for how to collect and synthesize them.

Using funding more efficiently

Strategies need to be developed on how to efficiently allocate funds spent on data collection to maximize the data/information that are needed especially in a changing climate.

Utilize the fishing industry for data collection

A common theme that arose during the development and application phases of the initiative was the need to collect more fishery dependent data and to better utilize those data in assessments and management in a timely manner. Integrating science with what industry is seeing on the water would also help develop trust between science and industry partners.

Foster partnerships for data sharing

Many entities collect data about the ocean, including academic institutions, non-governmental organizations (NGOs), and other ocean industries such as offshore wind and aquaculture developers. Fostering partnerships with these users may prove to be beneficial for all parties.

Leadership and Staff Roles

The NRCC has agreed to form two groups to help implement and support summit actions, the East Coast Climate Coordination Group and the Climate Innovation Group. These groups will evaluate and address the potential actions highlighted below as well as bring forward new ideas to address Atlantic coast fisheries issues in a changing environment. Each potential next step lists a proposed group that could lead the work on the issue.

Both groups will need logistical and administrative support, in terms of organizing meetings, etc. We suggest that the organizational support is provided by Councils/Commission/NOAA on a rotating basis, like the way that support is provided to NRCC currently.

East Coast Climate Coordination Group

Implementing the potential actions identified through this process will involve important changes to fishery management approaches. Change is difficult to achieve, given how busy everyone is, and how much coordination is involved. To provide the best chance of making effective changes happen, the East Coast Climate Coordination Group has been formed to oversee the implementation of these potential actions. This body will ensure actions are prioritized, jointly or by individual management organizations, estimate resources needed, and executed in a coordinated fashion. Note that all potential actions do not need to be applied universally - some might apply to only some areas, or management bodies, or FMPs.

The body will meet at least once per year, before an NRCC meeting. The appropriate NRCC meeting (spring or fall) will be determined based on the availability of related data and analyses that would influence group discussions (for example, meeting shortly after the State of the Ecosystem reports are presented to the NEFMC and MAFMC might be useful). It will be made up of one member from the following entities: the Commission, MAFMC, NEFMC, NOAA-GARFO, NOAA NEFSC, NOAA SEFSC, NOAA SERO, and SAFMC.

Climate Innovation Group

An early task for the Coordination Group will be to establish and identify the role of a staff-level Climate Innovation Group. Below are possible tasks for this group; these will be refined by the Coordination Group as appropriate and may evolve over time.

1. Identify ideas at an earlier stage that are worthy of consideration by the Climate Coordination Group. Essentially, the Climate Innovation Group would look out for important changes, bring these to the attention of the Coordination Group, and identify possible actions to undertake.
2. Regularly review changes to the factors shaping East Coast fishery management. Using the scenarios as a framework, the group will highlight shifts that might push us towards a different scenario (or a completely new scenario). For example, the group could track evidence¹ showing changes in ocean conditions, new evidence of climate impacts, developments in technology, changing influence of new ocean users, shifting policy

¹ Relevant evidence could be sourced from indicators in existing reports (e.g., State of the Ecosystem), or in collaboration with Science Centers, scientific committees etc. Other more qualitative developments could be sourced from headlines / stories in relevant publications, or from scanning of social media posts.

environment etc. The group could also track various initiatives and tools that could be useful to apply when addressing the various action items. On a regular basis, the group will meet to review and assess new evidence and discuss whether conditions are changing in important ways.

3. Highlight potential actions from the broader list of Summit suggestions. The Climate Innovation Group should determine if some ideas may be resurfacing as more important / more supported than they were at the time of the Summit, or if the feasibility of implementing them has changed, based on changing conditions.
4. Generate any new potential actions. The group will also imagine potential new actions that seem appropriate given the changing conditions. For items (2) and (3), the basic approach will line up with the scenario theory about 'placing bets across a matrix'. Some actions might be robust (work across all scenarios). Others might be recommended to avoid a worst-case scenario. Others might be small experiments to try as a possibility comes more into focus.
5. Present an update of changes and revised potential actions to the Climate Coordination Group, who will decide if any additional actions should be prioritized, resourced and executed.

The existing East Coast Scenario Planning Core Team could form the basis of the Climate Innovation Group, but there will also need to be an evolution of the role and composition of this team. The Climate Innovation Group could encourage a broad range of colleagues and stakeholders to be part of the conversations. For example, it could be important to tap into economists and social scientists to understand changes in socio-economic conditions. The Group should also look to engage with and seek input from management bodies.

High Priority Potential Actions

Theme 1: Cross-Jurisdictional Governance

G1. Reevaluate Council committee structure, use, and decision making

Description: Several potential actions were identified at the Summit related to committee structure, use, and decision making. These actions have been grouped together here as they are interrelated and should be addressed simultaneously for them to have meaningful impact.

As discussed in the Summit Report, these actions primarily address representation concerns related to changing species distributions; specifically, stakeholders who may have increased access to shifting species but may not have “official” representation in the Council process.

Further discussion will be needed regarding whether the potential actions below should occur for all Council-managed species, or whether modifications are only needed for certain species or FMPs that may be experiencing or are projected to experience notable distribution changes.

1. The Councils should **re-evaluate committee representation**, with a focus on FMPs where managed species have shifted or are highly vulnerable to climate change.
2. Councils could **enhance the role of committees in decision making**.
 - The goal of this change is to give more weight to the opinions of committee members who are not members of the Council managing the species.
 - One approach would be to modify Council SOPPs or other procedures to allow increased decision-making authority at the committee level. For example, committee motions that do not pass the full Council could be sent back to the committee to be reworked. Under such a scenario, the Council could not simply override the committee and make a different decision; the measure would need to be sent back to the committee.
 - Other approaches to enhance committee roles in decision making that are not currently possible under MSA are noted in the parking lot section.
3. The Councils should **evaluate how to move toward more alignment in the use of committees across Councils**.
 - Again, the goal of these changes is to give more weight to the opinions of Committee members that are not from the Council with responsibility for managing the species.
 - Currently, each Council and FMP uses committees differently in the decision-making process. Some Councils rely heavily on their committees to craft and guide analysis of management actions, while other Councils rely more on staff, other technical teams, and discussions at the full Council level. Addressing regional/stakeholder group representation concerns by modifying committee structures may be more effective if Councils use committees in a more similar manner. This would not mean that every committee must be used in exactly the same way or that each Council would have exactly the same rules for its committees; but the Councils would aim for some degree of increased consistency.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">● Conduct a leadership planning exercise to further explore options for committee-based decision-making, committee structure, and committee use, building on ideas discussed at the Summit	East Coast Climate Coordination Group

Potential Barriers and Considerations:

- As noted above, the range of possibilities for modifying committee roles in the Council process is currently limited by what is possible under the MSA.
- There are multiple aspects of committee structure, use, and representation that will need to be considered together under this potential action. As mentioned above, these issues are interrelated. For more consistent use of committees to have the intended effects, committee representation will need to be reconsidered. Without more consistent use of committees, restructuring committee representation may have limited impact on management outcomes.
- Increased reliance on committees may have drawbacks in terms of further entrenching management “silos,” given that more deliberation would occur in smaller groups, with more limited discussion occurring at the full Council. Depending on the extent of the Committee composition, this may lead to more differences in approaches between plans.
- If committee roles in decision making are enhanced, management could become less nimble if a Council and Committee become deadlocked, or if a committee cannot reach agreement. Both of these scenarios have occurred in the past.

G2. Re-evaluate and potentially revise Advisory Panel representation

Description: Climate-driven changes in species distributions are leading to increased concern about appropriate representation by geographic area in various parts of the management process. In addition to considering committee and other governance structures, the Councils and Commission should ensure that advisory panel (AP) representation remains appropriate and effective, including that it reflects the geographical distribution of the resource. A review of AP membership should also consider how other ecological and socioeconomic changes may drive changing needs for AP representation (e.g., changes in participation in a particular sector; trends in the use of certain fishing techniques or gears, etc.).

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Individual management bodies conduct evaluation of AP representation and appointment process, including how AP members are recruited and identified, with consideration of underrepresented and underserved groups. This could be conducted for selected or all FMPs and should consider how representation needs (by geographic area, stakeholder group, or other factors) may be evolving with changing conditions. 	Individual management bodies with staff level coordination between bodies

Potential Barriers and Considerations:

- Some management bodies have experienced recent struggles to recruit potential AP members, particularly when seeking broader representation. In addition, AP engagement can be challenging for some FMPs, which could limit the effectiveness of revised AP membership.
- The Councils and Commission should examine how AP input is currently used, and how it can better serve the process.
- Modifying AP representation does not necessarily mean expanding membership, but at a minimum considering whether representation is adequate given changing circumstances.
- If APs are expanded in terms of total members, increased costs may be incurred for meetings.
- AP members new to the management process will likely require training on fishery management and science concepts, e.g., through MREP or like programs.
- There could be other barriers to full AP participation, such as limited internet availability or access to a computer, for web-based meetings, limited English language skills, or inability to take time away from work uncompensated. Such issues would need to be addressed to ensure equity of access to the process.

G3. Develop joint management agreements with aim of clarifying roles and increasing efficiency

Description: Summit participants noted the importance of clarifying roles and increasing efficiency in jointly or cooperatively managed plans. There is currently a spectrum of approaches to joint or collaborative management, and while not all joint management needs to operate the same way, clearly defining and recognizing the pros and cons of different approaches would be helpful. Joint management has benefits for representation, but at times can hinder efficiency and efficacy when groups disagree, particularly if decision making is sequential. More explicit agreements between joint management participants could help to increase transparency and help groups work toward streamlining joint management processes. This issue may be particularly important to address if there is a desire or need for more joint management approaches in the future in response to changing species distributions. In addition, for species that are currently jointly managed, it would be beneficial to review whether the existing procedures and agreements are expected to continue working under different potential future conditions.

Practical Next Steps:

Potential Action	Group
<p><u>High Priority</u></p> <ul style="list-style-type: none"> Review joint FMPs and agreements between the MAFMC and Commission (summer flounder/scup/black sea bass/bluefish) to identify areas for improved efficacy and efficiency 	Commission and MAFMC staff
<p><u>Medium Priority</u></p> <ul style="list-style-type: none"> Evaluate need for additional review and/or agreements on cooperative or jointly managed plans (Council-Council or Council-Commission plans) 	East Coast Climate Coordination Group

Potential Barriers and Considerations:

- While considering joint/cooperative management relationships or FMPs on a case-by-case basis may be the most efficient and appropriate approach to this type of review, looking at other examples (within or across regions/management entities) could provide insight into potential ways of improving a particular joint management process.
- This topic will also be impacted by, and will impact, the consideration of committee structure under G1.

G4. Improve coordination across NOAA offices and regions

Description: Climate driven species distribution changes have begun to engage the Councils, and at times the Commission, with additional NOAA offices and regions. Processes and guidance can vary by office and region for similar issues or management problems. Improved coordination, particularly on process, will be important for efficiency in responding to management issues and the efficacy of the management response. It is also worth considering where there might be redundancies or duplicated efforts that could be coordinated to use resources more efficiently.

The idea of improved coordination was heard in each of the themes. The potential actions under M5 (evaluation of permit structures) and D4 (evaluation of data collection process) are linked to this issue.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">GARFO and SERO review respective management action procedures and processing to highlight opportunities each employs which may benefit or expedite implementation of actions approved by the Councils.	GARFO, SERO

Potential Barriers and Considerations:

- This is a potential action that seemed to have some support but lacked specifics in how it should be approached, other than some specific actions considered under the other two themes (M5 and D4).
- The potential action above pertains to the regional offices, but future consideration could be given to whether a similar process for the science centers, or between the regional offices and science centers, or with other offices within NOAA, may be worthwhile.
- As noted above, this potential action intersects in important ways with the other two themes and many of the potential actions within them. Effective coordination between NOAA offices will be critical to making progress on this potential action menu.

Theme 2: Managing Under Increased Uncertainty

M1. Identify ecosystem-level contextual information that can be considered within the management process to help incorporate climate information into decisions

Description: Changing climate and ocean conditions can impact fish stocks, fish habitats, and interactions between species and fisheries, sometimes in surprising ways. It is important to proactively consider ecosystem level impacts when making management decisions. This can be via quantitative or qualitative information, including the use of ecological risk assessments², such as the risk assessment MAFMC uses as part of its ecosystem approach to fisheries management framework, which results in a more holistic consideration of issues. NMFS has written a [technical memo](#) that provides examples of how ecosystem risk assessments have been used in fisheries management.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> NMFS offers to present findings of newly released Tech Memo looking at example ecosystem risk assessments to Councils and Commission 	NMFS staff coordinating with Councils/Commission
<ul style="list-style-type: none"> Consider adding major state-only-managed fisheries to these ecosystem risk assessments for a more complete perspective 	NMFS
<ul style="list-style-type: none"> Identify opportunities to use specific types of quantitative and qualitative ecosystem information to identify and avoid risks 	Climate Innovations Group, individual Councils and Commission
<ul style="list-style-type: none"> Share lessons learned 	NRCC or other

Potential Barriers and Considerations:

- No forcing mechanism
- Need here is likely to be Council/Commission and FMP specific

Long-Term Objectives:

- Create a fishery management system aware of and able to respond to significant ecosystem changes.

² Ecological risk assessments are management decision tools that integrate information on individual and cumulative pressures to estimate the relative probability and magnitude of an undesirable ecological response. They provide a framework that can analyze relative risk broadly or in response to a small number of drivers. A climate vulnerability assessment is a more limited and targeted form of risk assessment.

M2. Streamlining FMP documentation and rulemaking

Description: Councils spend substantial staff time writing NEPA and other federal compliance documents, so processes that introduce efficiency should allow Councils to reduce administrative work, resulting in time savings that could be used to address new climate-oriented initiatives. Streamlining the FMP and regulatory processes is also a key way to make management more nimble and efficient, so that management responses to changing conditions can be completed in a more timely manner.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Review the use of programmatic Environmental Impact Statements (EISs) for Council actions and encourage their use where appropriate 	MAFMC considering this near-term
<ul style="list-style-type: none"> Identify areas where NEPA documents can be streamlined, including when incorporation by reference to recent related documents would be appropriate 	GARFO, SERO, NMFS HQ, Councils
<ul style="list-style-type: none"> Develop more clear and consistent guidelines for use of Categorical Exclusions (CEs) under NEPA, including MSA document templates; identifying NMFS vs. Council responsibilities 	GARFO, SERO, NMFS HQ, Councils
<ul style="list-style-type: none"> Work with NOAA General Counsel (GC) to establish consistent GC guidance with regards to the use of CEs and Supplemental Information Reports (SIRs), rulemaking, public comment etc. 	GARFO, SERO, NMFS HQ
<ul style="list-style-type: none"> Identify process steps Council and NFMS staff can take to use MSA documents to satisfy NEPA requirements 	GARFO, SERO, NMFS HQ, Councils
<ul style="list-style-type: none"> Consider alternative rulemaking approaches or action development approaches 	GARFO, SERO, NMFS HQ

Potential Barriers and Considerations:

- Programmatic EISs involve a large investment of time and resources up front; should consider whether the efficiency gained on the back end is worth it.
- Might inadvertently limit opportunities for public participation in the process, in certain cases

Long-Term Objectives:

- Identify options for reducing burdens associated with NEPA and other documentation, without sacrificing the public process and opportunities for meaningful input.

Theme 3: Data Sources and Partnerships

D1. Expand study fleet, include recreational fisheries, and ensure data are used

Description: The vision of a study fleet is a partnership between the science centers, management bodies, and fishermen where the science centers define data needs for assessments and management. There is currently a small commercial fisheries study fleet in the Greater Atlantic region; however, expanding the study fleet along the coast, particularly to include recreational fisheries, would greatly benefit the assessment/management process under a changing climate. This would require cooperation by all parties to better utilize fishery dependent data in the assessment/management process.

Practical Next Steps:

Potential Action	Group
<u>High Priority</u>	
<ul style="list-style-type: none"> Identify places where study fleet and associated projects' data can be utilized in Council and Commission work plans and actions. Develop a mechanism for Councils and Commission to access study fleet data. Develop a plan to track and communicate use of study fleet data. Find ways to incentivize industry to participate. Within this plan include using industry to collect more environmental data via instrumentation and data loggers. 	Councils, Commission, and Centers
<ul style="list-style-type: none"> Include Recreational Study Fleet Pilots in GARFO's Recreational Saltwater Fishing draft policy implementation plan (NEFSC has already initiated an initial pilot focused on the New England for-hire groundfish fleet) 	GARFO, NEFSC
<u>Medium Priority</u>	
<ul style="list-style-type: none"> Develop shovel-ready cooperative research projects that can be quickly initiated if funding becomes available. 	Centers
<u>Parking Lot</u>	
<ul style="list-style-type: none"> Develop plan to incorporate the recreational study fleet data to improve recreational estimates from Marine Recreational Information Program (MRIP) 	Centers

D2. Use survey mitigation around offshore wind to transition to industry-based surveys or other survey platforms

Description: The development of offshore wind areas will present challenges for accessing survey areas using traditional methods/gear. This is an opportunity to redesign surveys and transition to industry-based or other platforms that could be more effective in offshore wind areas.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Implement the NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast U.S. Region 	NEFSC, adapting strategy to other regions in the future.
<ul style="list-style-type: none"> Explore opportunities to utilize smaller platforms such as commercial vessels for conducting surveys 	Centers
<ul style="list-style-type: none"> Develop plan for integrating multiple survey data streams into the assessment process 	Centers

D3. Improve the use of existing data

Description: While there is definitely a need for new and novel data sources, there is a wealth of data already available in the region that could be better utilized. This includes being more transparent on how current data is used but also thinking of ways to take advantage of existing behaviors (e.g., generating recreational catch data from social media posts). Making use of this kind of selective/anecdotal data as opposed to relying solely on census or survey data is more important when traditional data is scarce. In addition, as data collection activities expand, plans for how it will be used should be made. Some potential actions are listed below, but this priority should be ongoing. New ideas to use existing data should be supported moving forward.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Hold meetings to discuss what existing data streams and historical datasets could be better utilized to inform decision making, assessments, and monitoring. Do this across regions and management bodies. 	Councils, Commission, Regional Offices, and Centers
<ul style="list-style-type: none"> Have similar meetings at the PDT/FMAT level for more immediate FMP needs. 	Councils and Commission

Medium Priority Potential Actions (Watch List)

The potential actions in this category are important but not as suitable for near-term action as those on the high priority list. This is referred to as a watch list because the Climate Coordination and Climate Innovation Groups will routinely track whether environmental or fishery conditions, and/or resources and support available for these actions, have changed in a manner that would increase the priority level of these actions.

Theme 1: Cross-Jurisdictional Governance

G5. Evaluate mechanisms for cross-pollination of SSCs

Description: As with G1 above, there are a range of possibilities for actions that could enhance cross-pollination between the different Council SSCs as well as the Commission’s science groups, particularly for species that a) are jointly managed, and/or b) are experiencing changes in distribution across jurisdictional boundaries.

Mechanisms for increased coordination and information sharing between SSCs could include (but are not limited to) formation of cross-SSC subgroups, holding more joint SSC meetings, holding joint subgroup meetings, or assigning liaisons between different SSCs. Further discussion is needed to explore where it might be helpful to have multiple groups involved in decision making/recommendations, vs. simply more coordination and exchange of information/ideas.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Hold a workshop inviting a subset of all three East Coast SSCs and representation from the Commission Science Community to identify potential ways of improving coordination and knowledge sharing between East Coast SSCs, particularly for species spanning multiple jurisdictions and jointly managed species 	Councils and their SSCs and invited participants from the Commission
<ul style="list-style-type: none"> Consider adding to topics for discussion at future Scientific Coordination Subcommittee (SCS) meeting(s) 	SCS steering committee; CCC

Potential Barriers and Considerations:

- Although the next steps and approach talk about sharing ideas, not developing shared management advice, if the latter is considered, this must be approached with caution as individual Councils are bound by the ABC recommendations of its appointed SSC.
- Higher costs of larger combined meetings could be an issue, given travel expenses for larger groups would be greater, and because SSC members are compensated for their time.

Theme 2: Managing Under Increased Uncertainty

M3. Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts)

Description: Many fishery management bodies have existing risk policies. Risk relates to both the probability of an event occurring, and the severity of expected outcomes. Risk policies identify the bounds of how risk tolerant a management body should be given certain criteria. These policies inform and work in conjunction with harvest control rules.

Existing risk policies might be based on assumptions of stationarity. At the Summit, participants discussed how these policies could be reassessed to include the challenges related to a changing climate and non-stationarity in marine populations and ecosystems. Discussions noted a need to address species responding poorly to, and those benefiting from, changing ocean conditions. Summit participants also discussed North Pacific Fishery Management Council (NPFMC) use of risk tables as a quantitative way to assess and communicate multiple uncertainties, including those related to climate. During implementation of the risk policies, it will be important to clearly communicate uncertainty.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Share NEFMC compilation of risk policies from across all Councils. Present the report to NRCC and explain what NEFMC is doing to revisit its risk policy, which is a multi-year work priority starting in 2023. Also present the Commission's new policy when finalized. 	NEFMC/ Commission
<ul style="list-style-type: none"> Develop a staff-level working group to discuss pros and cons of different approaches for accounting for climate-related uncertainties within the risk policies, including how to respond to species doing well in a changing climate. Bring forward to East Coast Climate Coordination Group for discussion. 	Climate Innovation Working Group
<ul style="list-style-type: none"> Evaluate the need for all Councils/Commission to consider climate in their risk policies and explore potential benefits of aligning risk policies where practicable. Offer time to discuss alignment at future NRCC meetings. 	East Coast Climate Coordination Group
<ul style="list-style-type: none"> Identify steps individual Councils/Commission can take to make risk policies more reflective of climate challenges 	All east coast Councils and Commission
<ul style="list-style-type: none"> Ensure the risk policies consider and clearly communicate intricacies of uncertainty (including the shape of the uncertainties) when making policy/ changing management 	All east coast Councils and Commission

Potential Barriers and Considerations:

- No forcing mechanism
- Need to consider benefits and challenges of aligning policies
- MAFMC recently updated their risk policy (2020) so are unlikely to want to update it again in the near future
- The Councils seem to want the ability to retain separate risk policies

Long-Term Objectives:

- Councils implement risk policies that account for climate change and this facilitates climate resilient fisheries. Provide pathways within risk policies for considering stocks that are climate change winners differently
- Where practicable and needed (i.e. for fisheries under joint management), align risk policies between management bodies so that management is consistent up and down the coast
- If there is interest, expand this discussion to include other Councils/regions via the CCC

M4. Identify and establish best practices for increasing nimbleness and/or responsiveness in management

Description: In situations where plausible future conditions can be predicted either quantitatively or qualitatively, it may be useful to create management frameworks that are nimble, adaptable, and robust to expected changes. For example, if/then triggers could be applied in certain limited management circumstances where a range of responses could be considered in advance. Resulting actions could then be implemented through an expedited process. This potential action was identified as a medium priority for a coordinated climate adaptation initiative because it can be addressed individually by each management body. Examples are available in existing FMPs.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> ● Identify good examples of if/then triggers being used in management. Examine examples for best practices. Brainstorm other areas where if/then triggers might be useful such as ecosystem-based triggers or governance triggers. <ul style="list-style-type: none"> ○ Southeast Shrimp example: close federal waters when states request and have provided environmental info to the SE Regional Administrator ○ Commission example: GOM/GB lobster gauge size change triggered by recruitment index, striped bass immediate action if the assessment indicates specific outcomes, considering dropping fine scale monitoring northern shrimp unless a trigger condition is reached ○ New England skate example: if a skate total allowable landings limit (TAL) is exceeded for wing or bait by >5%, this triggers the Regional Administrator to reduce possession limits for the following fishing year ○ Mid-Atlantic surfclam example: minimum size waiver where discard, catch, and survey data indicate 30% of clams below 4.75 inches (50 CFR 648.75(b)(3)) 	Climate Innovation Group; Councils, Commission, and NMFS

Potential Barriers and Considerations:

- Councils may be hesitant to use if/then triggers because unforeseen circumstances may make a certain trigger response less appropriate or effective. Changing the trigger response would be possible but could require a longer process.
- Given uncertainties in the stability of surveys, especially given changing ocean uses, it may be challenging to develop and implement triggers based on survey indices.
- Doing sufficient NEPA analysis in the action where triggers are developed could be challenging and require assumptions about future conditions.

Long-Term Objectives:

- Identify options for increasing nimbleness and robustness of the fishery management process.

M5. Create a more adaptable structure for fishing permits

Description: Lack of access to fishing permits, allocation, or quota can limit a fisherman’s ability to adapt to changes in fish stocks. Fishing permits are not consistent between fishery management bodies or fisheries. Can managers revise the permit system to make it more flexible and adaptable to impacts from a changing climate?

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> ● Improve data systems (two interrelated actions) <ul style="list-style-type: none"> ○ Create a shared vessel registry to streamline data accessibility ○ Advance One Stop Reporting 	NMFS electronic reporting/monitoring group
<ul style="list-style-type: none"> ● Review permit systems on the East Coast to identify areas where the regulations can be modified to allow for flexibility and adaptability by the fishermen. <ul style="list-style-type: none"> ○ Are there permits in place that can be split? ○ Can emerging species be added to existing permits? ○ Do some permits need to be bundled? ○ Engage industry through advisory panels or other means to identify issues. Multiple engagement approaches are likely needed. 	NMFS, Councils, and Commission working with fishing industry
<ul style="list-style-type: none"> ● Present findings and recommendations to modify programs to allow for adaptability to Councils and Commission. 	Council Staff/NMFS

Potential Barriers and Considerations:

- Fishing businesses have invested heavily in permits and thus may be hesitant to embrace change.
- U.S. East Coast permitting structure is extremely complex - state vs. federal differences, regional differences, species/FMP differences
- There are concerns that splitting previously bundled permits across two or more fishing vessels could increase fishing effort and therefore impact conservation.

Long-Term Objectives:

- Create a flexible and adaptive permit system. For example, create a system that allows fishermen to adjust fishing to match the species present in their historical fishing area, or allows them to follow the fish and land the fish in a new location.

Theme 3: Data Sources and Partnerships

D4. Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)

Description: Having standardized surveys and other data collection/storage methods across the various regions would allow data to be more easily transferable and usable. This is particularly important when considering survey changes/limitations arising from external factors like climate change and offshore wind development. This is the foundation of the fisheries management process. Securing funding and starting this process is important.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">Develop a National Survey Program	NOAA
<ul style="list-style-type: none">Northeast and Southeast Fisheries Science Centers develop a strategy for combining survey methodology (This could include standardizing survey gear where appropriate or a modeling framework to merge different survey technologies)	Centers/ State-Federal Programs
<ul style="list-style-type: none">Prioritize and develop data standards so data can be readily used in various modeling frameworks that combine data across regions	Centers/State-Federal Programs
<ul style="list-style-type: none">Standardize data management and storage so the data is readily accessible by researchers	Centers/State-Federal Programs

Potential Barriers and Considerations:

- Confidentiality of state/Fed data. Offshore wind reluctance to share data.
- Consider economic data as well as environmental and biological.
- Need to evaluate regional and coastwide fishery dependent and independent data systems to facilitate assessment of shifting populations.
- Consider reviewing and standardizing east coast permits because data collection is so tightly linked to the permits. See M8 above.

D5. Focus on Artificial Intelligence and technology development to get data into assessments more rapidly

Description: Under a changing climate there will be a greater reliance on multiple data sources. Quickly synthesizing data to keep pace with change will require reliance on technology to automate much of the processing.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">Start developing AI to better integrate video and camera surveys as well as other large data integration needs	Centers
<ul style="list-style-type: none">Develop methods to directly funnel fishery-dependent data (VTRs, observer data, study fleet, etc.) into assessments and for use in monitoring.	Centers and Regions

Parking Lot (Lower Priority) Actions

As noted in the Introduction, this section is intended to hold ideas that are low in priority, infeasible to meaningfully address under current conditions, or are in conflict with other approaches with higher levels of support. All potential actions will be regularly reviewed by the Climate Innovation Group and the Climate Coordination Group. The Coordination Group will shift priorities as needed based on what is or is not working, and based on how conditions may be changing. The intent of this section is to maintain a record of these Summit ideas for possible future reconsideration as conditions change, but to take no near-term action on them.

Theme 1: Cross-Jurisdictional Governance

G1 (Parking lot). Additional ideas for reevaluating Council committee structure, use, and decision making

These items were raised during the Summit but would require changes to MSA and are therefore included in this section rather than with the other G1 actions. Potential actions for reevaluating Council committee structure, use, and decision making that could be considered in the short-term are discussed under G1 in the High Priority Potential Actions section above.

- Give committees final votes on FMP actions. The action would not need approval by the full Council.
- Allow for committees to take final action on some types of management tools or approaches without full Council approval, while other actions would require going back to the Council. E.g., committees could develop specifications without Council approval but amendments and frameworks would require Council approval.

Potential Barriers and Considerations:

- This would require legislative action.

G6. Coastwide Council with varying voting representation by FMP

Description: Some Summit attendees suggested the idea of having one East Coast Management Council with opt-in participation by states. This was primarily supported to increase levels of coordination, efficiency, and for increased ease of ensuring adequate representation as species distributions and other conditions change.

Under such an approach, the Council could be organized such that the full Council would not need to vote on each management plan; the opt-in participation could be at the level of Boards or committees designed to provide appropriate representation based on interest/fishery occurrence. Expanded committees may be needed under this approach, where there are multiple representatives from each state (like the Commission's Boards). This governance structure is not currently provided for under the MSA.

This potential action is included in the list of possible actions for potential longer-term consideration due to the legislative barriers to implementation, as well as the desire to first explore other, smaller scale changes within our current system. Some considered this to be a long-term idea to consider if more modest adjustments to our governance structure don't accomplish our objectives. In the coming decades, if there is increasing overlap in representation needs, it may be more efficient to manage species and stocks through a single East Coast Council.

Potential Barriers and Considerations:

- This would require legislative action.
- Concerns were expressed about this structure leading to the loss of more local representation by Council members and to stakeholders feeling less connected to and invested in the process.
- It may be difficult to populate a large East Coast Council if members would need to be responsible for keeping track of more management plans than they do currently.

G7. Change state representation on councils

Description: To address representation concerns caused by changing stock distributions, some Summit participants suggested evaluating which states would most appropriately have voting representation on each East Coast Council. This included the suggestion of evaluating whether there should be more states that sit on multiple Councils (like North Carolina and Florida currently do).

Giving states votes on Councils could be a more meaningful change in representation compared to giving liaisons voting rights, as it could allow access to at-large seats.

Potential Barriers and Considerations:

- This would require legislative action.
- Compared to some of the other governance potential actions in this document, this would be a less flexible or nimble way to modify governance structure. If additional changes are needed in the future, the likely need for further legislative action to do so could limit how quickly changes could be made.

G8. Clarify and potentially expand the roles of liaisons between Councils

Description: As species distributions change and effective communication and coordination between different management entities becomes increasingly important, the role of the liaisons between Councils may become more important. In addition, as representation concerns become more pronounced, it is important to clearly define the ways in which liaisons are expected to represent the views of their Council and what degree of influence they should have on another Council's deliberations. Summit participants discussed that the Council liaison role may be used somewhat differently between Councils, and between different people who have held that role at the same Council. The question of whether liaisons should be given some level of voting rights led to a discussion of the intended role of the liaisons, e.g., whether liaisons are intended to be representing the views and positions of their full Council (which is not always possible), and/or to serve in a general communication/coordination role. Additional clarity around the role of Council liaisons, and potentially increased consistency in their use, may be beneficial. In addition, consideration could be given to potential changes to the role of the liaison, particularly in light of the representation concerns described above under G1 (high priority actions).

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Develop report on the roles and use of liaisons between Councils and between the Councils and Commission, potentially building on 2007 Mid-Atlantic Fishery Management Council's Report to Congress on COUNCIL MANAGEMENT COORDINATION, but with recommendations for improving clarity and effectiveness of the liaison role 	TBD
<ul style="list-style-type: none"> Conduct an evaluation of the feasibility and pros and cons of liaison voting rights (at full Council) 	CCC

Potential Barriers and Considerations:

- If there is a desire to give liaisons voting rights at the full Council level, this would require legislative action.
- The role of liaisons may need to be considered in conjunction with, or following, reconsideration of committee structure and use as described above. These potential actions are motivated by similar representation concerns, and any potential changes to committee representation and use may influence the future desired role of Council liaisons.
- The Councils may wish to consider adding definitions/clarification of the liaison role into their SOPPs, operations handbook, or other written policies.

G9. Consider allowing proxies for Council members

Description: Currently, appointed Council members cannot use proxies or designees to fill in for them at meetings because the MSA only provides for the principal state officials, the Regional Administrator, and the nonvoting members to designate individuals to attend Council meetings in their absence. Allowing for proxies could help alleviate increased workload issues for Council members, particularly if future governance changes lead to increased committee meeting frequency, more joint management meetings, or other changes that increase workload for Council members. Currently, equity and representation issues may arise from the workload and time commitments required for Council membership and how they would limit many people from participating.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Consult with General Counsel on what would be required to allow proxies for appointed Council members. 	NMFS Headquarters
<ul style="list-style-type: none"> Raise at a future CCC meeting to gauge interest and explore feasibility. 	Councils

Potential Barriers and Considerations:

- If pursued, additional thought would need to be given to the distinction (if applicable) between and definitions of proxy, designee, or alternate. With these definitions, the role and abilities of a proxy/designee/alternate would need to be clearly defined. For example, what would be the expectations and rules for attendance, voting, chairing committees, compensation, etc.?
- Additional clarity is needed on whether legislative changes would be required, and whether proxies would also need to be appointed by the Secretary of Commerce, potentially in conjunction with the appointment of regular Council members.
- In the Commission's structure, Commissioners are allowed to appoint proxies (ongoing, board specific or meeting specific). This has advantages for spreading the workload across multiple people, but also creates a cost barrier of sending multiple people to meetings. This could create similar issues in the Council system for Council proxies if both the appointed member and proxy need to attend a meeting, particularly when considering Council member stipends.
- The role of proxies may need to be considered in conjunction with, or following, reconsideration of committee structure and use as described in G1 (high priority). Some workload issues could be addressed under a review of committee representation and process (e.g., if there is explicit consideration of ensuring workload balance across committees for individual Council members; and if most committee meetings are held in conjunction with Council meetings or by webinar).

Theme 2: Managing Under Increased Uncertainty

M6: Include spatial considerations in management; specifically in relation to leading and trailing edges of shifting stocks

Description: Climate change is influencing the distribution of some fish stocks, including expansions, contractions, shifts northward, and shifts offshore. As stocks shift their distribution, there may be advantages to managing the leading and trailing edge of a stock differently. For example, if stock genetic diversity is high at one of the edges, more conservative management may make sense. Similarly, if an ecological niche has been recently vacated in an ecosystem, then management may want to minimize fishing on a replacement species to ensure the replacement species is able to form a viable population in the new area. Some stock assessments (e.g., work of the Transboundary Management Guidance Committee, which allocates quota to countries based on stock distribution) are already beginning to account for such shifts.

Practical Next Steps:

Action	Group
<ul style="list-style-type: none"> • Create a working group to explore this issue. <ul style="list-style-type: none"> ○ Compile examples of where spatial considerations across a fishery or stock have been used in management decisions. ○ Explore ways to measure stock shifts (scientifically) and how to identify what should be considered leading and trailing edges 	Climate Innovation Working Group
<ul style="list-style-type: none"> • Recommend East Coast Councils/Commission consider if spatial management is appropriate for any of their managed stocks. <ul style="list-style-type: none"> ○ Figure out which stocks this is an issue for using LEK and ecological information ○ Consider spatial distribution when making management decisions (Review King and Spanish mackerel and cobia management and consider these approaches for other stocks with a focus on leading and trailing edges being managed differently than the core). 	Councils/Commission

Potential Barriers and Considerations:

- National Standard 3 requires that stocks are to be managed as a unit throughout their range, to the extent practicable.
- National Standard 4 does not require the same management across the entire range of a stock, just management that does not discriminate between states.
- Enforcement could be more complex if regulations differ between areas.

Long-Term Objectives:

- Plan for shifting stocks; ensure management has considered the potential needs of stocks leaving or moving into an area (it would be detrimental to fishermen if important stocks leave an area and no replacement stocks move in), and ensure the ecosystem remains healthy.

M7. Consider alternative management options instead of, or in addition to, using stock assessments that directly incorporate environmental or ecosystem parameters within the assessment

Description: Changing climate and ocean conditions mean that underlying assumptions common to stock assessment models (i.e., environmental stationarity and ecosystem equilibrium conditions) are no longer valid. This will make identifying appropriate catch limits more challenging than it is now.

Given that changing climate and ocean conditions can impact many aspects of a fish stock (direct impacts on productivity and distribution of the stock, changes to habitat, changes to predator/prey relationships, etc.) it may be impossible to incorporate all important sources of uncertainty into stock assessment models and results. Therefore, in addition to incorporating climate indicators directly into traditional stock assessments, it may be important to consider alternative approaches to incorporating climate uncertainties into the management process, including other methods for accounting for uncertainty in the stock assessment and other methods for setting catch limits that are robust to multiple uncertainties. Alternative approaches may not be useful for all fisheries, and thus there will be a need to evaluate and identify which species could most benefit from alternative approaches.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> ● Look for case studies on robust management options, including: <ul style="list-style-type: none"> ○ Indicator based management (Bluefin tuna) ○ Robust Harvest Control Rules (UCSB peer reviewed paper) ○ Dynamic reference points 	Climate Innovation Group
<ul style="list-style-type: none"> ● Look for case studies on when MSE was useful in supporting decisions 	Climate Innovation Group
<ul style="list-style-type: none"> ● Using the CVA results, identify east coast managed species that are particularly vulnerable to climate change and consider developing new approaches for those species <ul style="list-style-type: none"> ○ For example, MAFMC and NEFMC are considering how a combination of species and habitat CVAs can be used to identify focal Habitat Areas of Particular Concern to prioritize consideration for conservation recommendations 	All east coast Councils and Commission

Potential Barriers and Considerations:

- Communication across science and management spaces may be challenging
- MSE is costly with lots of upfront investment, but intended to save time/resources long term
- Robust HCRs should not be the only approach, especially in situations where the data or assumptions feeding into the HCR are incorrect.

Long-Term Objectives:

- Explore options for creating management frameworks, harvest control rules, etc. that are robust to the uncertainties associated with a changing climate.

M8. Better incorporate qualitative information including local ecological knowledge (LEK) and community vulnerability assessments to improve management in a changing climate

Description: Implementing quantitative analyses of climate impacts on all species is not feasible. Therefore, identifying options for incorporating qualitative information on how the ecosystem is changing and fisheries are reacting may be both necessary and useful. There are existing examples to build on: MAFMC has a risk assessment that combines quantitative and qualitative information to better understand the risk a fishery will not meet its management goals, and NPFMC uses semi-quantitative risk tables to understand risks not included within a stock assessment. Participants at the Summit expressed interest in ways to incorporate local or traditional ecological knowledge into the fisheries management process. These types of information are relevant across multiple actions identified here, including M1, use of ecosystem level context, M3, use of risk policies, and M6, spatial considerations.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> ● Inventory where and how qualitative information, including LEK is currently being used in management and identify ways into management process, including: <ul style="list-style-type: none"> ○ Examine proposed and implemented ideas from the NPFMC climate taskforce ○ Consider examples from Southeast where participatory modeling incorporated LEK into stock assessments 	Climate Innovation Group
<ul style="list-style-type: none"> ● Improve the use of Community Vulnerability Assessments <ul style="list-style-type: none"> ○ Identify NMFS’ plans to characterize community vulnerability in the past and near future. Identify options for filling any gap ○ Discuss options for using knowledge of community vulnerabilities to plan for the future. ○ Note that not all community vulnerabilities are climate-focused. 	Climate Innovation Group
<ul style="list-style-type: none"> ● Consider expanding State of Ecosystem (SOE, used in New England and Mid-Atlantic) and Ecosystem Status Reports (ESR, used in the South Atlantic) to include qualitative indicators, for example qualitative network models. <ul style="list-style-type: none"> ○ NEFMC discussed this during the 2023 SOE briefing 	NEFSC/ SEFSC

Potential Barriers and Considerations:

- Need to establish trust of qualitative data and indicators as compared to quantitative indices
- Those who hold LEK will need to agree to provide it

Long-Term Objectives:

- Create a robust fishery management process responsive to quantitative and qualitative information.

Theme 3: Data Sources and Partnerships

D6. Develop incentives for better reporting to help reduce uncertainty

Description: The best way to improve the assessment/management process under changing climate conditions and shifting species distributions is to ensure the most accurate data is available. Fisheries dependent data is particularly useful as it is collected year-round and at a finer spatial scale than is possible with fisheries independent data. Therefore, it is important to incentivize accurate and timely reporting.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none">Develop tools to better utilize citizen science	Centers, Councils and Commission
<ul style="list-style-type: none">Develop a report that identifies weaknesses in fishery dependent reporting requirements	Centers
<ul style="list-style-type: none">Develop plan to monitor and enforce compliance to reporting requirements	Councils, Commission, Law Enforcement, Permit Offices
<ul style="list-style-type: none">Better coordinate with State and Federal recreational data collection to utilize state volunteer survey data	Centers and Commission

Potential Barriers and Considerations:

- More consistently apply and enforce reporting requirements

D7. Modernize data management to facilitate better sharing of data and prepare for an influx of new data streams (e.g. offshore wind data) and foster new partnerships

Description: Other uses of the ocean are rapidly expanding. While dealing with various sectors can be challenging, it also creates an opportunity for us to foster new partnerships. As such, we can and should anticipate an influx of new data streams.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Hire staff dedicated to fostering partnerships and coordinating data collection/sharing between other ocean users, management bodies, and within Federal agencies 	Centers
<ul style="list-style-type: none"> Explore new partners that would mutually benefit from serving as a platform for data collection (USCG, DOD, IOOS/Regional Associations, merchant marines, transit, National Marine Sanctuaries, etc.) 	Centers
<ul style="list-style-type: none"> Approach NGOs and Universities to develop mutually beneficial projects and funding. 	Centers, Regional IOOS Associations
<ul style="list-style-type: none"> Host a forum of known partners to discuss available funding sources, potential collaborations, and data gaps. 	Centers, Regional IOOS Associations
<ul style="list-style-type: none"> Use offshore wind turbines as platforms for data collection. 	Centers, Regional IOOS Associations, State/Federal Programs

Potential Barriers and Considerations:

- Relationships with other ocean users can be contentious.

D8. Develop a process between management and science organization to prioritize data needs for climate-ready management (e.g., human dimensions data)

Description: The need for more data will continue to increase under a changing climate. It is unlikely that we will be able to expand on existing data collection without sacrificing data that is currently collected. It will be imperative for the agency and the regions to prioritize data needs to focus on what will be most important moving forward, especially human dimensions data.

Practical Next Steps:

Potential Action	Group
<ul style="list-style-type: none"> Prioritize human dimensions data and identify training opportunities for managers to help them better consider human dimensions in decision making. 	Councils, Commission, Regional Offices, and Centers
<ul style="list-style-type: none"> Hold a workshop to determine which data needs are necessary across regions to inform decisions and prioritize the collection of those data. Consider the relevance of findings from the 2021 NOAA Fisheries Atlantic Coast Science Coordination Workshop, the NMFS Next Generation Data Acquisition Plan, and other relevant workshops and reports. 	Centers

Appendix: List of Actions by Priority

G=Cross-Jurisdictional Governance
M=Managing Under Increased Uncertainty
D= Data Sources and Partnerships

High Priority

- G1. Reevaluate Council committee structure, use, and decision making
- G2. Re-evaluate and potentially revise Advisory Panel representation
- G3. Develop joint management agreements with aim of clarifying roles and increasing efficiency
- G4. Improve coordination across NOAA offices and regions
- M1. Identify ecosystem-level contextual information that can be considered within the management process to help incorporate climate information into decisions
- M2. Streamline FMP documentation and rulemaking
- D1. Expand study fleet, include recreational fisheries, and ensure data are used
- D2. Use survey mitigation around offshore wind to transition to industry-based surveys or other survey platforms
- D3. Improve the use of existing data

Medium Priority (Watch List)

- G5. Evaluate mechanisms for cross-pollination of SSCs
- M3. Improve the use of risk policies to better account for current and future climate impacts on species (both negative and positive impacts)
- M4. Identify and establish best practices for increasing nimbleness/ responsiveness in management
- M5. Create a more adaptable structure for fishing permits
- D4. Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)
- D5. Focus on AI/technology development to more rapidly get data into assessments

Parking Lot

- G1. Additional ideas for reevaluating Council committee structure, use, and decision making
- G6. Coastwide Council with varying voting representation by FMP
- G7. Change state representation on councils
- G8. Clarify and potentially expand the roles of liaisons between Councils
- G9. Consider allowing proxies for Council members
- M6: Include spatial considerations in management; specifically in relation to leading and trailing edges of shifting stocks
- M7. Consider alternative management options instead of, or in addition to, using stock assessments that directly incorporate environmental or ecosystem parameters within the assessment
- M8. Better incorporate qualitative information including local ecological knowledge (LEK) and community vulnerability assessments to improve management in a changing climate
- D6. Develop incentives for better reporting to help reduce uncertainty
- D7. Modernize data management to facilitate better sharing of data and prepare for an influx of new data streams (e.g., offshore wind data) and foster new partnerships
- D8. Develop a process between management and science organization to prioritize data needs for climate-ready management (e.g., human dimensions data)



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MEMORANDUM

Date: July 27, 2023
To: Council
From: Kiley Dancy, Brandon Muffley, and Mary Sabo, Staff
Subject: NOAA Fisheries Climate Governance Policy (MSA §304(f) guidance)

Overview and Council Objectives

At the May 2023 meeting of the Council Coordination Committee (CCC), NOAA Fisheries presented a draft procedural directive titled “[Guidance on Council Authority for Preparing Fishery Management Plans for Stocks that May Extend across the Geographic Areas of more than one Council, pursuant to MSA §304\(f\)](#)” (also referred to as the “Fisheries Climate Governance Policy” or “draft policy”). The draft policy is intended to provide guidance on when and how the Secretary of Commerce will review and assign management authority over existing (and potentially new) fisheries found across more than one Council jurisdiction. NOAA Fisheries has requested input on the draft policy from the regional Councils. The agency is accepting comments until **November 17, 2023**, with a goal of completing and implementing the policy in Summer 2024.

Given the Mid-Atlantic Council’s shared regional boundaries with two other East coast Councils, as well as the number of Mid-Atlantic stocks that extend beyond the Council region boundaries, this policy has the potential to directly impact a number of Mid-Atlantic Council fishery management plans.

On **Wednesday, August 9**, the Council is scheduled to discuss the draft policy and consider potential Council comments. The following briefing materials are included for the Council’s consideration of this issue:

1. Scientific and Statistical Committee (SSC) comments on the draft policy – report from the July 12, 2023, SSC webinar meeting.
2. A copy of the NOAA Fisheries Draft Climate Governance Policy.

In addition, the following will be posted as a supplemental material on the Council meeting page:

3. Preliminary staff comments for potential inclusion in a comment letter.

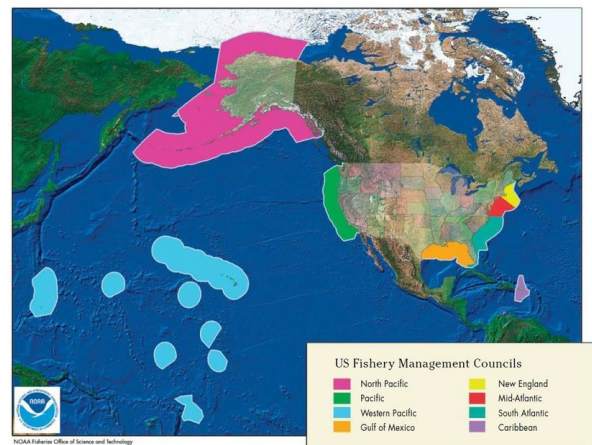
Following the discussion at the Council meeting, staff will develop a draft letter which will be circulated to Council members for review. Council staff recommend submitting comments well ahead of the November 17 deadline to give NOAA Fisheries more time to consider and incorporate the Council’s comments. Council staff are also coordinating with the other regional Councils on the development of a CCC comment letter. Updates will be posted at <https://www.mafmc.org/actions/nmfs-climate-governance-policy>.

Public Comment Concerns

It is staff's understanding, based on the information presented at the May 2023 CCC Meeting, that NOAA Fisheries is not planning to solicit public comments on the draft policy. On July 7, 2023, the Mid-Atlantic Council [sent a letter to NOAA Fisheries](#) expressing concern about the lack of planned public outreach or comment opportunities. The letter, which noted that the policy had not yet been made publicly available on the NOAA Fisheries website, requested that NOAA Fisheries "immediately take steps to inform the public about the availability of this draft policy and schedule a formal public comment period including several public meetings or webinars." Depending on the response (if any) to this letter, the Council may choose to independently solicit comments from stakeholders to submit to NOAA Fisheries. Staff is seeking input from the Council on this matter at the August Council Meeting.

Background on the Draft Fisheries Climate Governance Policy

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), each of the eight regional fishery management councils has responsibility for fisheries within specified geographic areas and is required to prepare and submit fishery management plans (FMPs) for fisheries that "require conservation and management." In situations where a fishery extends beyond the geographic area of any one Council, §304(f) of the MSA authorizes the Secretary of Commerce to either designate a single Council to prepare an FMP or require two or more Councils to prepare an FMP jointly.



To date, the Councils and NOAA Fisheries have addressed management of fisheries that span multiple Council jurisdictions on a case-by-case basis. However, NOAA Fisheries has stated that additional guidance is needed to address governance issues associated with climate-related shifts in stock distributions. As such, their draft policy was developed to provide guidance on when and how the Secretary will review and assign management authority over existing (and potentially new) fisheries found across more than one Council jurisdiction.

The draft policy proposes a four-step process for reviewing the geographic scope of fisheries and Council management authority. A brief summary of each step is provided below.

Step 1: Consider Whether to Review Geographic Scope and/or Council Authority

In Step 1, NOAA Fisheries would determine whether a review of geographic scope and/or Council authority is needed. The draft policy states that NOAA Fisheries would consider conducting a review under the following circumstances:

- If information indicates a potential geographic shift of the species or fishing effort, including, but not limited to:
 - A shift of greater than 15% of landings revenue or recreational effort to another Council's jurisdiction (based on a comparison of multi-year averages).
 - Documented shift in stock distribution.
 - Certain Council actions that have cross-jurisdictional implications.
- Upon request from a Council (with supporting information and rationale)

Step 1 lists an array of data sources that NOAA Fisheries could consider, including stock assessments, fishery independent and dependent data, traditional and ecological knowledge, stakeholder-provided information, ecosystem status reports, and more. After analyzing the available information, NOAA Fisheries would determine whether a review of initial determinations/designations is warranted, and, if so, proceed to Step 2.

Step 2: Determine the Geographic Scope of a Fishery

The objective of Step 2 would be to determine the geographic scope of the fishery, considering both the location of the fish (species, sub-species, and stocks) and the location of fishing effort. The draft policy lists a variety of data sources and “additional considerations” that could be considered during this step. However, it does not provide details on the process that would be used for making a determination. The draft policy states that Councils could be given up to six months to make a recommendation to NOAA Fisheries on how the fishery should be identified. If Step 2 concluded that there is one fishery that extends into areas of authority for more than one Council, the process would move on to Step 3.

Step 3: Designation of a Council or Councils under MSA § 304(f)

In Step 3, NOAA Fisheries would designate one or more Councils to be responsible for preparing, or amending, the FMP. The possible outcomes of this step would be: (1) one Council is designated to manage the fishery throughout its range, (2) multiple Councils are designated to manage the fishery jointly throughout its range under one FMP, or (3) multiple Councils are designated to manage the fishery via multiple FMPs.

The draft policy includes an extensive list of “considerations” that could be considered as part of Step 3, as well as several “presumptions pertaining to designations”:

- If more than 75% of a fishery’s landings revenue accrues to, or recreational fishing effort occurs in, another Council's jurisdiction, there would be a presumption that NOAA Fisheries would assign/reassign management authority to the other Council.
- If between 40% and 75% of a fishery’s landings revenue accrues to, or recreational fishing effort occurs in, another Council’s jurisdiction, there would be a presumption that NOAA Fisheries would either assign joint management authority to the two Councils or assign multiple Councils to develop multiple FMPs.
- [If data from non-fishery dependent sources indicate [15 - 75 % distribution changes], then [TBD, NMFS is seeking input about how to develop a presumption here].

Appendix 2 of the draft policy describes additional considerations and recommendations for each potential designation. The relevant Councils could be given up to six months to make a designation recommendation. At the end of this step, NOAA Fisheries would document the rationale for the designation decision and notify the relevant Councils.

Step 4: Transitioning to Revised Council Authority

Step 4 describes the process and guidelines for transitioning management authority from one Council to another. The policy states that there would be at least a 2-year phase-in period, starting with the notification of revised designations, during which the Councils transition responsibilities. It also states that the existing FMP and regulations should remain in-place until superseded or amended by the responsible Council(s), and the Council that historically led the FMP should not undertake any modifications to allocations or permitting requirements during this transition period.



Mid-Atlantic Fishery Management Council Scientific and Statistical Committee Meeting

July 12, 2023

Terms of Reference

In May 2023, the NMFS released the draft Fisheries Climate Governance Policy. This policy is intended to provide guidance on Council authority for stocks that may extend across the geographic area of more than one Council, pursuant to §304(f) of the Magnuson Stevens Act (MSA). The Mid-Atlantic Council intends to submit comments to NMFS and has requested that the SSC review and comment on the draft policy. Upon review of the draft policy, the SSC will provide a written report that addresses the following:

- 1) *Comment on the overall proposed process to review the geographic scope and/or Council authority as described in the draft Fisheries Climate Governance Policy developed by the NMFS.*

(Note: Given the overlap and interconnection between the draft policy and different Terms of Reference, similar comments/responses may be found under multiple Terms of Reference)

- The SSC recognizes that stocks and fisheries are shifting as a result of climate change and other drivers, and that this may result in an increasing disconnect between the location of fisheries and the Council(s) with their primary jurisdiction. The draft Fisheries Climate Governance Policy is an attempt to proactively define an adaptive procedure to address the likely consequences of such shifts. The SSC broadly agrees with the need for transparency and forward thinking in addressing the challenges that might be posed by shifting stocks.
- The objectives of this policy should be more clearly and specifically defined. Councils have successfully managed stocks with overlapping boundaries and have taken numerous management actions to address the impacts of climate change without the need for changes to the current NMFS process or designating a new lead Council authority. What is the specific problem the draft policy is trying to address? What are the anticipated benefits and what are the expected costs associated with a change in lead Council designation? How would these costs and benefits be measured and evaluated relative to National Standard 7?
 - NOAA Directives do not have the force and effect of law and are not meant to bind the public. Given this discretion, what is the purpose/utility of such guidance if it is not binding?
 - Optimally, the specific objectives of a policy would be used to define the appropriate metrics by which the need for management intervention would be identified. The lack

- of objectives in this proposed policy makes interpreting and assessing the appropriateness of the proposed indicators and thresholds impossible.
- Major changes to management, like changing the primary Council, should be a last resort after other potential options have been deemed insufficient.
 - The implications of this policy are potentially large for many different stakeholders. A meaningful stakeholder comment process will be important. These stakeholders should include the interstate fisheries commissions (e.g., ASMFC). Changes in Council management could be more disruptive for jointly managed fisheries.
 - Range shifts are not monotonic - they shift in multiple directions over time. How will this policy address species that shift northward for a few years and then back to their earlier distribution? Will the management structure revert as well?
 - Many components of the decision points are not operationally defined. Thus, they will not lead to predictable and scientifically defensible decisions. This limits the benefit of transparency that is one of the stated goals of this directive.
 - The policy does not provide clear operational definitions of the criteria used to evaluate potential fishery/jurisdiction changes. For example, apparent shifts in stock distribution differ depending on factors such as which survey(s) is used to define the distribution of fish, and how boundary lines are drawn in federal waters (see Palacios-Abrantes et al. 2023, <https://doi.org/10.1371/journal.pone.0279025>). Thus, identifying a specific percentage of fish inside or outside the region is problematic.
 - Similarly, other aspects of the decision points are defined very specifically (e.g., a 15% threshold) with no evaluation presented to justify these choices or their implications. The descriptions about calculating averages over time are vague, with only examples that describe a three-year moving average.
 - Only four Councils have contiguous boundaries: New England, Mid-Atlantic, South Atlantic, and Gulf of Mexico. A national directive would then seem to apply only to the east and Gulf coasts.
 - Many Fishery Management Plans (FMPs) are intended for more than one species. The directive does not clarify how the process would apply to multiple species under a single FMP. It seems this would require even more work to possibly move one or more species out of the group covered by the FMP.
 - There is also no process specified for independent scientific peer review of these determinations/designations. This may lead to many transitory disturbances in the fishery. The absence of a well-defined scientific review process could lead to poorly justified and expensive changes to the *status quo* without compelling scientific evidence.
 - Processes other than climate change may cause the proposed metrics to change. For example, offshore wind farms could change available habitat or areas that can be fished. Management (e.g., changes to state or sector allocations, changes to closed areas) could also cause metrics to change.
 - How would this process interact with other NMFS guidance related to management under climate change, including National Standard 3 and the [agency-wide EBFM policy](#) and [EBFM Road Map](#)? This should be clarified. Are the procedures outlined here intended to help implement these policies? If so, how?

2) *Provide feedback on the application and potential implications of the proposed review criteria, metrics, and data sources described in Section III, Step 1 (Review Considerations), Step 2 (Geographic Scope of Fishery), and Step 3 (Council Designation). For Steps 1 to 3 consider appropriateness of the criteria and metrics, their feasibility of application, and the ability of current data streams to support decision making. Propose alternative criteria, metrics, and data sources where appropriate.*

- Some consideration should be given to the purported permanence of the change in these factors. Much of this document relies on the principle that such changes are irreversible and are caused by climate change instead of other factors like management.
- The bases (i.e., “criteria indicators”) for change may not be the same ones that were used to establish jurisdictions originally. Scallops and Monkfish might be good case studies. Blueline Tilefish would be another.
- Documenting a change in a stock’s distribution will not be easy to define. The variable definitions used in the literature will need to be tightened considerably before such changes can be used for decision making.
 - Methodologies will need to be sufficiently standardized to define relevant threshold criteria and how the uncertainty should be estimated. The document does not prioritize data sources or indicators used in defining or documenting a shift in stock distribution. Some hierarchy or prioritization of data sources/indicators would improve operational use and reduce instances of conflicting interpretations of distributional change. Data sources and criteria used to make decisions may be prioritized based on data quality and to avoid potential social-economic consequences of the decision, but details are lacking.
 - What is the basis for a 15% shift as a trigger of interest? What constitutes a “documented” shift in stock distribution? What statistical criteria would apply? How will interannual shifts in distributions be separated from longer-term and more permanent trends? This needs more technical specificity and is probably more suited for longer-term research.
 - A first step would be a review of historical changes in these metrics. Concepts from statistical control theory would be useful to distinguish signal from noise.
 - Criteria will often conflict (some indicating change, others no change or change in other directions). This can even be true within a single indicator (e.g., spring vs. fall trawl survey). How will divergent indicators be reconciled (e.g., recreational fishery appears to be shifting whereas commercial does not)?
 - The period for this shift (i.e., shift of greater than 15% in the proportion of a fishery’s landings revenue) is not specified. For small or non-target fisheries, spikes in catches or revenue might be fairly common. Moreover, alternative economic metrics should be considered - for example, net revenue might be more appropriate than landings revenue. Identifying the appropriate metric will depend on exactly what is intended to be captured (e.g., economic impacts vs welfare, etc.).

- Data sources have inherently different levels of quality and uncertainty. For example, defining such a metric from the MRIP data will be difficult (i.e., shift of greater than 15% in the proportion of a fishery’s recreational fishing effort: does the 15% refer to the point estimate?) because the MRIP estimates are often highly uncertain at small spatial scales (e.g., states). Therefore, determining changes in stock distributions may require greater precision than MRIP is currently able to provide at the state level.
- The problems in determining the fraction of catch in an area becomes especially critical as catches are restricted because it takes a smaller amount of fish or effort to make a big change percentage-wise.
- The SSC supports using multi-year information to mitigate against outliers; however, the ambiguity of geographic boundaries will impede any specific application of this recommendation.
 - Presumptive multi-year metrics - what happens to stocks with 25-40% change in landings revenue?
- The criteria currently seem to conflate footprint of the biological stock and footprint of the fishery. According to MSA (§3(13)), the definition of a “fishery” has two components: “(13) The term "fishery" means— (A) one or more stocks of fish which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics; **and** [emphasis added] (B) any fishing for such stocks.” Thus, is it accurate to assume that distribution of both components must change significantly?
- How would a significant change in stock distribution be determined? What is the time period over which that change is observed? Three years, as proposed, is likely too short to differentiate a range shift from interannual variability, and is less than a generation for many managed species.
 - As well, any multi-year average should be longer than the timetable for evaluation and implementation of governance changes (12 months for Council feedback on geographic scope and designations and a two-year transition evaluation, after which an updated three-year average could trigger reinitiation of the process). The latter includes a tradeoff between the risk of frequently changing management authority (too short a time period) vs risk of insensitivity to trends in changing distribution (too long a time period). These periods may also differ depending on individual stock and effort dynamics – distributions of some stocks and associated effort may be inherently more variable over time.
 - Changes may emerge through a suite of drivers: climate change, ocean acidification, wind energy areas (potentially affecting distribution of both stocks and effort). We currently do not have adequate infrastructure to monitor changes in stock distributions as wind energy areas expand.
- The draft policy ignores the data uncertainty in the “Sources of Data” section and therefore makes the proposed policy risk-prone, not risk-averse - i.e., how will uncertainty be evaluated and accounted for in the decision process?

3) *Comment on any social and economic implications and considerations the draft policy could have on Mid-Atlantic fisheries and communities.*

- The changes in management contemplated in this policy could be extremely disruptive for fishing because of different practices followed by each Council. These potential changes could introduce management uncertainty that influences capitalized values of quota, permits/licenses (and associated vessels), and/or long-term business planning. For example, the Councils use different approaches to set OFLs, ABCs, and ACLs. The potential to change which Council is in charge of management may create substantial uncertainty in future management.
- Six months to evaluate candidate changes in Council leads does not allow for multiple Council meetings, coordination with states and Interstate Commissions, and full public participation, no less proper compliance with NEPA and other applicable laws. There appears to be no opportunity in the process to get input on the potential implications from stakeholders on the potential change in management.
- The draft policy has a blind spot in its underlying assumptions and subsequent policy analyses regarding social and economic behaviors, relying on currently inadequate data collection programs. Scientific approaches largely do not exist to monitor and predict changes in markets, entry and exit, changes in home port, profitability, scalability, and business and financial health and flexibility. So the consequences of changes in lead Council, and under whose jurisdiction a user would actually fall under, are uncertain based solely on readily available information like permit address.
- The draft policy may create perverse incentives, including: (1) a disincentive for collaboration among Councils; (2) a response in which a proliferation of defined stocks occurs, increasing management complexity and costs (i.e., multiple FMPs across Councils for the same species); (3) relatively minor changes in real or reported landing locations to cause/prevent a jurisdiction shift. Ambiguities in definitions, delineations, and timelines identified above could also increase the number of court challenges.
- The policy should recognize that there is a difference between a fishing business and a fishing vessel. A business could have vessels fishing from multiple ports, but a headquarters at a specific location. It seems that the current draft directive should anticipate and address this type of integrated business in its design.
- As defined under step 4, a freeze on modifications to allocation or permits during the phase-in period could have serious consequences for business planning, which would be exacerbated by possible court challenges.

4) *Comment on the potential science and stock assessment implications of this policy (including development and timing of scientific advice to inform the management process).*

- Data responsibilities and workload consideration across Science Centers will be particularly important to understand because changing the Council in charge of the FMP may change the Science Center that provides advice.
 - Who conducts the standardized analysis of distribution shifts is yet to be determined.
 - How will the distribution shift analyses be conducted? Will one or multiple independent committees conduct the distribution shift analyses to meet the needs of steps 1 and 2? If so, how will the committees be formed? The data and the probable

- methods/approaches used are likely the same, although the objectives of steps 1 and 2 are different.
- How will data be shared across regions, Science Centers, Councils, and other agencies? Sometimes different data are collected in different regions.
 - Will a change in Council be associated with a change in the NMFS Science Center responsible for assessment and, if so, how will resources be shifted to accommodate this change?
 - Will data and sampling infrastructure be improved and standardized across regions? If resources can be made available for this, it would be highly beneficial to science and assessment across all regions.
- A transition to a new Council governance structure will likely require development of new data streams and/or integration of existing streams within and between NOAA Fisheries Regional Offices and Science Centers. This will require new resources, but the policy only advises mitigation “to the degree practicable.”
 - Many current data collection programs are region-specific, so recognizing shifts is complicated by differences among collection programs.
 - Current assessment science teams and stock assessment peer review processes are region-specific (e.g., SARC/SAW vs SEDAR) and may require modification under new Council management.
 - Data collection protocols designed for larger scale assessments may not support smaller management areas separated across Councils.
 - Increasing spatial resolution in assessments may require additional resources for both development and review of assessments.
 - Management Strategy Evaluation (MSE) is increasingly being used to guide development of approaches for setting ABCs. However, current MSEs don’t consider potential changes in management procedures associated with changing the Council (e.g., changing the OFL to ABC policy). Thus, guidance derived from MSEs may no longer be relevant once jurisdiction changes.
 - Transition would also erode the substantial institutional knowledge that resides within each Council and Science Center staff, which would be difficult to replicate in the transition period defined.
- 5) *Provide guidance and/or recommendations for Council consideration and possible inclusion in the Council's comments on the draft policy.*
- A Policy Directive that outlines the underlying science and/or management issue should have been developed and approved before making a Procedural Directive (i.e., the Climate Governance Policy). Then a procedural directive follows that would outline the process to address the policy. The current draft policy contains no information on the foundation as to what this policy is based on, and no science was presented to demonstrate issues exist. Particularly important is a review of how Councils have been responding to stocks shifting their distributions to date.
 - A policy directive should clarify what the primary concern regarding representation might be. In the current situation, all stakeholders have an opportunity to comment irrespective of council jurisdiction. If the primary concern is the absence of a voting

- member on the Council, modification of council membership might be simpler than spawning multiple FMPs.
- The policy directive should also include a review of previous Council efforts to manage stocks with shifting ranges. While challenges remain, these efforts appear to be effective without the need for many of the approaches described in the procedural directive.
 - It is unclear how this directive intersects with the [East Coast Scenario Planning](#) process and [possible outcomes](#).
 - It would be helpful to have a list of species and associated Councils with management authority that might be driving the need for this directive.
- Fishery Designation options 1-3 – some information on the current status of designation of stocks in categories 2 and 3 would be helpful. Spiny Dogfish and Monkfish fall in Designation 2. Golden Tilefish and Blueline Tilefish are in Designation 3.
 - All of these Fishery Designation options imply either *status quo* or expansion of management council involvement. What about contraction of jointly managed stocks to only being managed by a single Council? For example, might scallops be transferred from New England to the Mid-Atlantic?
 - Designation 3 (multiple councils, multiple FMPs) will require stock assessments that would likely occur at smaller spatial scales than is currently done. In general, there has not been sufficient advancement in the science and, as important, the data to support such estimates.
 - Who supports the research to develop improved techniques and approaches to support this policy?
 - The section of the policy that describes transitioning to revised council authority (step 4) specifies no permitting or allocation decisions by the lead council should be taken during the transition period. This implies a freeze on management actions, which could be problematic for species experiencing overfishing or other aspects of management.
 - Perhaps an "ombudsman" seat on the Council could address specific concerns of a state without a seat at the table. For example, a RI ombudsman could be part of the Mid-Atlantic process for squid issues. This might be more efficient than completely changing management authority.
 - The amount of change that would need to happen to trigger a change in management should be extremely large. Otherwise, there is the risk of the stock flickering back and forth over the threshold. Major changes to FMPs with changes in Councils would likely be very disruptive to stakeholders and management partners.
 - NOAA should test these rules through different case studies on a wide range of species (e.g., life history, management history) to see how their rules might be applied and understand when a change in management is truly needed. These case studies should envelop the entire process: define the problem and objectives, identify metrics to support objectives, and test any proposed approaches. The formation of a national working group, similar to those formed to review National Standard guidance, to provide technical advice on best practices should be considered to evaluate and determine significant changes in stock and fishing distribution, with worked examples when possible. Care should be taken in this process to avoid giving the impression to stakeholders that these case-study tests represent policies that are likely to be implemented. Rather these should only be paper exercises to make sure potential rules appear to work as intended.

- The base period and the time period used for comparison should be considered based on the species' life history, the uncertainty of the population dynamics, and the specific ecosystem characteristics (warming trend versus oscillation).
- There is no consideration or discussion of costs (besides mentioning the word) associated with these changes in responsibilities. How will NMFS address the modification of Council budgets to reflect the additional burdens, in particular on science, management and administration?
- There is another set of issues that is left undescribed. The draft directive policy fails to acknowledge the close intersection and integration of MSFCMA management with state partnerships in science and management that need to be considered in evaluating lead Council changes. For example, if a lead Council shift occurs that moves responsibilities to a new Region and Science Center, existing Cooperative Agreements, Research Set Asides, etc., with states for state data collection, research, and enforcement of FMPs and JEAs may have to be renegotiated under a potentially new management and administrative regime - is a two-year transition sufficient and will the state partners be willing participants? It will be hard to say because the policy is not being shared with them in advance for review, which is a major oversight and may strain relationships with key management and science partners. Greater public input on policy with a focus on other management partners (i.e., regional fisheries commissions) is recommended.

Attachment 1

MAFMC Scientific and Statistical Committee

July 12, 2023

Meeting Attendance via Webinar

Name

Affiliation

SSC members in attendance:

Tom Miller	University of Maryland – CBL
Ed Houde	University of Maryland – CBL (emeritus)
John Boreman	NOAA Fisheries (retired)
Jorge Holzer	University of Maryland
Yan Jiao	Virginia Tech University
Sarah Gaichas	NOAA Fisheries NEFSC
Wendy Gabriel	NOAA Fisheries (retired)
Mike Wilberg (Vice-Chairman)	University of Maryland – CBL
Cynthia Jones	Old Dominion University
Gavin Fay	U. Massachusetts Dartmouth
Alexei Sharov	Maryland Dept. of Natural Resources
Geret DePiper	NOAA Fisheries NEFSC
Andrew Scheld	Virginia Institute of Marine Sciences
Mark Holliday	NOAA Fisheries (retired)
Rob Latour	Virginia Institute of Marine Science
Olaf Jensen	University of Wisconsin-Madison

Others in attendance:

M. Sabo	K. Dancy
G. DiDomenico	C. Moore
H. Hart	J. Fletcher
M. Lapp	B. Muffley
J. Beaty	B. Brady
A. Bianchi	J. Hornstein
M. Seeley	M. Duval

Procedural Directive: Guidance on Council Authority for Preparing Fishery Management Plans for Stocks that May Extend across the Geographic Areas of more than one Council, pursuant to MSA §304(f)

I. Introduction

In anticipation of an increasing number of fish stocks shifting in geographic distribution, new fisheries emerging, and other demographic shifts in fisheries, the National Marine Fisheries Service (informally, NOAA Fisheries) has identified a need for guidance on determining the geographic scope of fisheries and on how to determine which Regional Fishery Management Council(s) (Council) will be responsible for preparing and amending new and/or existing fishery management plans (FMPs) for fisheries that extend or have moved beyond the geographical area of authority of any one Council, including those that move, across Council boundaries.¹

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), each of the eight Councils has responsibilities for fisheries within specified geographic areas (MSA § 302(a)(1))² and is required to prepare and submit FMPs for fisheries that “require conservation and management” (MSA § 302(h)(1); *see also* 50 C.F.R. § 600.305(c)). In situations where a fishery extends beyond the geographic area of any one Council, MSA § 304(f)(1) authorizes the Secretary of Commerce³ to either designate a Council to prepare an FMP, or require the relevant Councils to prepare an FMP jointly. To date, NOAA Fisheries and the Councils have addressed management of fisheries that span multiple Council jurisdictions on a case-by-case basis.⁴ However, given that the geographic scope of fisheries is expected to continue to shift across Council jurisdictions in the future, preparing in advance for these situations, and having an established process and guidance in place for addressing them, will give NOAA Fisheries, the Councils, and the public a more transparent, orderly, and responsive approach for fishery management.

This policy provides guidance on (1) determining whether to review the geographic scope of a fishery and/or the designation of Council authority; (2) determining the geographic scope of the fishery; (3) designation of Council authority under MSA § 304(f); and (4) guidance for transitioning management from existing Council(s), if needed.

II. Overview of Key Legal Provisions

Section 302(a) of the MSA establishes the eight Councils and provides authority over fisheries off the coasts of their states. Section 302(h)(1) requires each Council to prepare an FMP and amendments “for each fishery under its authority that requires conservation and management.”

¹ This policy does not apply to Atlantic Highly Migratory Species which are managed pursuant to sections 302(a)(3) and 304(g) of the MSA.

² Pursuant to MSA §304(f)(2), NOAA Fisheries has specified these exact geographic boundaries in terms of latitude and longitude at 50 CFR 600.105.

³ MSA responsibilities were delegated from the Secretary to the NOAA Administrator (DOO 10-15 § 3.01(aa)) and redelegated to the Assistant Administrator for Fisheries (NOAA Transmittal 61 § II(C)(26)).

⁴ For a review of NOAA Fisheries’ management of fisheries that span multiple Councils’ jurisdictions, see NOAA Technical Memorandum NMFS-OSF-10 September 2021 (Morrison). Link: <https://repository.library.noaa.gov/view/noaa/32347>

Section 303(a)(2) requires that Council-prepared FMPs contain a description of the fishery, including: the number of vessels, the type and quantity of fishing gear, and the species and their locations.

Section 304(f)(1) provides that for fisheries that extend beyond the “geographical area of authority of any one Council,”

(1) the Secretary may—

- (A) designate which Council shall prepare the fishery management plan for such fishery and any amendment to such plan; or
- (B) may require that the plan and amendment be prepared jointly by the Councils concerned.

The MSA defines “fishery” as:

- (A) one or more stocks of fish which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics; and
- (B) any fishing for such stocks. §3(13).

The MSA defines “stock of fish” as:

a species, subspecies, geographical grouping, or other category of fish capable of management as a unit. §3(42).

The FMP’s description of the fishery must comply with National Standard 3, which requires that:

To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination. §301(a)(3).

The NS 3 Guidelines explain that, within this strong preference for managing a stock as a unit throughout its range, a less comprehensive management unit may be justified. 50 C.F.R. § 600.320(c), (e)(2). For example, if complementary management exists or is planned for a separate geographic area or for a distinct use of the stocks, or if the unmanaged portion of the resource is immaterial to proper management, separate management units may be allowed. *Id.* § 600.320(e)(2).

III. Determining the Geographic Scope of a Fishery and Council Authority

As of the date of this Procedural Directive, for most currently managed fisheries, initial determinations of geographic scope and designations of Council authority for preparing fishery management plans have already been completed. NOAA Fisheries does not anticipate changing these designations unless there is a change in circumstances. When there is a need to review geographic scope and/or Council authority, NOAA Fisheries will notify the relevant Councils and initiate the process set forth below.

For a newly emerging fishery that has not previously been managed under the MSA and is in need of an initial designation of Council authority, this process can begin at step 2.

A flow chart providing a high-level overview of this process is set forth in Appendix 1.

STEP 1: Consider Whether to Review Geographic Scope and/or Council Authority

a. In general, NOAA Fisheries will conduct a review if:⁵

- i. Criteria listed in paragraph (b) below indicate that a fishery may be experiencing geographic shift; or
- ii. Upon request from a Council. A Council requesting a review must provide information on why the review is being requested and data supporting the request.

b. Criteria that may indicate a need for review of Initial Determinations/Designations

To prevent frequent transitions of management authority between Councils, NOAA Fisheries will use multi-year averages of the metrics described below. For example, for landings revenue, a comparison of two sets of 3-year averages could be used (e.g., 2019-2021 vs 2022-2024). Criteria that can indicate a need for review of the geographic scope of a fishery and/or Council authorities include, but are not limited to:

- Indicators of significant change in the location of species, sub-species, and/or stocks and/or fishing effort that could affect Council jurisdiction may include, but are not limited to:
 - A shift of greater than 15% in the proportion of a fishery's landings revenue that accrues to another Council's jurisdiction. This consideration should take into account any regulatory requirements that may be affecting where fish are landed as opposed to where they are caught.⁶
 - A shift of greater than 15% in the proportion of a fishery's recreational fishing effort occurs in another Council's jurisdiction.
 - Documented shift in stock distribution.
- Certain Council actions, such as allocation revisions or changes to permit requirements that have cross-jurisdictional implications.

c. Sources of data can include but are not limited to:

- Stock Assessments.
- Fishery independent surveys.
- Fishery dependent data.
 - Landings.
 - Observer Information.
 - Logbooks.
 - Vessel Monitoring System (VMS) data.
 - Recreational fisheries catch and effort estimates.
- NOAA's Distribution Mapping and Analysis Portal (DisMap), <https://apps-st.fisheries.noaa.gov/dismap/>.

⁵ NOAA acknowledges there could be additional circumstances that could warrant a review other than those described here.

⁶ This consideration should also address whether trends in state versus federal landings differ.

- Traditional and Ecological Knowledge.
- Stakeholder-provided Information.
- Ecosystem Status Reports or similar products.

d. Determine whether to conduct a review.

After analyzing the metrics and information described in (b) and (c) above, NOAA Fisheries will determine whether a review of initial determinations/designations is warranted, and, if so, proceed to Step 2 below.

STEP 2: Determine the geographic scope of a fishery

a. Roles

Determining the geographic location of a fishery involves consideration of legal, policy, and scientific issues and includes a certain amount of flexibility. Within their geographic areas of authority, Councils have discretion, subject to NOAA Fisheries’ approval, in describing the fisheries and stocks for management purposes, but must comply with the MSA and applicable laws including requirements to utilize the best scientific information available and demonstrate a rational basis for their descriptions.

In addition to the approval authority described above, under MSA § 304(f), NOAA Fisheries has the authority to evaluate and determine the geographic location of fisheries that may occur within the geographic areas of authority of more than one Council.

b. Data to Consider

i. In determining the location of a fishery, it is necessary to consider both the:

- Location of fish species, sub-species, and stocks.
- Location of fishing effort.⁷

ii. Sources of data can include, but are not limited to:

- Stock Assessments.
- Fishery independent surveys.
- Fishery dependent data.
 - Landings.
 - Observer Information.
 - Logbooks.
 - Vessel Monitoring System (VMS) data.
 - Recreational fisheries catch and effort estimates.
- NOAA’s Distribution Mapping and Analysis Portal (DisMap), <https://apps-st.fisheries.noaa.gov/dismap/> .
- Traditional and Ecological Knowledge.
- Stakeholder-provided Information.
- Ecosystem Status Reports or similar products.

⁷ In any location, effort may be categorized as commercial, recreational, subsistence, or a combination of these.

c. Additional Considerations

There are multiple factors, in addition to the physical location of the fish and fishing effort, that are important to characterizing the geographic scope of fisheries. For example:

- Management goals and objectives of existing FMPs, if any (50 CFR 600.305(b)).
- Need for conservation and management.⁸
- Management efficiency.
- Biological considerations, including genetics.
- Infrastructure such as the vessels, dealers, ports, etc., that fish for, catch, purchase, process, and otherwise handle the product.

When considering “new” and “expanded fisheries,” NOAA Fisheries and the Councils must consider whether the appearance, or increased abundance, of a species in a new location, or a change in effort in a new location, indicates that a fishery extends beyond the geographic boundary of one Council. To mitigate against outlier occurrences, multi-year information should be used whenever possible.

d. Determination

When determining the geographic scope of a fishery, NOAA Fisheries may choose to give the relevant Council(s) a specified period of time of up to 6 months from the date of notification in which to recommend how the fishery/ies should be identified pursuant to the considerations set forth in this document.⁹

NOAA Fisheries will evaluate the Council(s) recommendation and, at the conclusion of Step 2, document the geographic scope of the fishery/ies with three possible outcomes:

- Outcome 1: There is one fishery in one Council’s area of authority. That Council is responsible for that fishery under MSA § 302(a).
- Outcome 2: There are separate fisheries in multiple Council areas of authority. Each Council is responsible for the fishery/ies under its area of authority under MSA § 302(a).
- Outcome 3: There is one fishery that extends into areas of authority for more than one Council. NOAA Fisheries may designate a Council or Councils to be responsible for developing the FMP. If this is the outcome, proceed to Step 3.

STEP 3: Designation of a Council or Councils under MSA § 304(f)

a. Roles

If NOAA Fisheries determines that one fishery extends beyond the geographic jurisdiction of a single Council (i.e., outcome 3 in Step 2), the agency will designate one or more Councils to be responsible for preparing, or amending, the FMP.

⁸ NOAA Fisheries’ existing guidance pertaining to whether a fishery is in need of conservation and management is at 50 CFR 600.305.

⁹ If specifying a period of time for Council feedback, NOAA Fisheries will consider relevant MSA deadlines.

In making these designations, NOAA Fisheries will consult with the relevant Councils, and provide 6 months (unless a different schedule is necessary to comply with MSA requirements), in which to recommend a designation.

- Councils may submit, jointly or separately, information describing how they would plan to cooperate with other Council(s), accommodate interests of stakeholders from other regions, and other information relevant to this designation. This may include descriptions of challenges in any current system such as lack of stakeholder representation or other concerns regarding equity or fairness.

a. Fishery/ies Designations and Considerations

Designation of management authority may be expressed as one of the following three options:

- Designation 1: One Council, One FMP. The Secretary designates one Council to manage the fishery throughout its range.
- Designation 2: Multiple Councils, One FMP. The Secretary designates multiple Councils to jointly manage the fishery throughout its range within a single FMP. This may include designating one Council as the “lead.”
- Designation 3: Multiple Councils, Multiple FMPs. The Secretary designates multiple Councils to manage the fishery via multiple FMPs.

NOAA Fisheries will consider, among other things:

i. In General

- Geographic range of the fishery or management units (current and historical).
- Number of and geographical distribution of species, sub-species, and/or stocks.
- Characterization of need/s for conservation and management (can include social, economic, ecological, ecosystem functions, etc.).
- Efficiency/responsiveness/adaptability of management.
- Representation, access, and participation of stakeholders and interested parties in the decision-making process that develops fishery management measures. This includes demonstrated ability, or articulated plans, of a Council to accommodate stakeholder needs from other jurisdictions.
- Location of fishing effort/activities.
- Location of landings.
- Location of current and potential future processing facilities.
- Existing permits.
- Community impacts, including community dependence, community adaptability, community access to adjacent fisheries, fairness, equity, and environmental justice.
- Inter-relationships with other managed species.
- Need for cross-jurisdictional coordination (e.g., potential for effort shifts if management measures are different under multiple FMPs).

- Objectives of existing FMPs, and effectiveness of existing oversight in achieving those objectives (e.g., overages, overfishing, or rebuilding progress) and reasons the oversight is effective or not.
- Optimum yield, NS 3, and other National Standards.
- Ability to maintain fishing mortality targets and limits across the range of the fishery.¹⁰
- Cost.
- Existence of data collection programs.
- Comparative effectiveness of existing examples of single versus joint Council management in other fisheries.
- For fisheries with an international component, which Council primarily works with the relevant regional fisheries management organization.
- Other factors deemed as relevant to the specific scenario under consideration.

ii. Presumptions pertaining to designations: To prevent frequent transitions of management authority between Councils, NOAA Fisheries will use multi-year averages of the metrics described below.

- If more than 75% of a fishery's landings revenue accrues to, or recreational fishing effort occurs in, another Council's jurisdiction, there is a presumption that NOAA Fisheries will assign/reassign management authority to the other Council;
- If between 40% and 75% of a fishery's landings revenue accrues to, or recreational fishing effort occurs in, another Council's jurisdiction, there is a presumption that NOAA Fisheries will either assign joint management authority to the two Councils or assign multiple Councils to develop multiple FMPs.
- [If data from non-fishery dependent sources indicate [15 - 75 % distribution changes], then [we are seeking input on how to establish a presumption here].

iii. General recommendation. When appropriate, NOAA Fisheries may choose to remind Councils that, if there is a need for conservation and management and Councils fail to act within a reasonable time, NOAA Fisheries may take action under MSA § 304(c)(1)(A).

Additional considerations and recommendations applicable to each potential designation result are set forth in Appendix 2.

b. Designation of Council FMP Authorities

NOAA Fisheries will document the rationale for the designation decision and notify the relevant Councils. NOAA Fisheries will work with the relevant Councils to assure a smooth transition to revised governance pursuant to Step 4.

STEP 4. Transitioning to Revised Council Authority

If there is a change in authority from one Council to another, there will be at least a 2-year phase-in period, starting with the notification of revised designations, during which the Councils transition

¹⁰ When splitting responsibilities for management of a single stock, NOAA Fisheries must ensure all requirements of the MSA can be met under split authority. Each FMP and each management action under that FMP will be evaluated for compliance with the MSA and other applicable law.

responsibilities. The existing FMP and regulations should remain in-place until superseded or amended by the responsible Council(s). It will be important to ensure that, pending completion of any new FMP or amendment, the fishery remains compliant with the MSA and other applicable law. When planning for a management transition, Councils and NOAA Fisheries must comply with any statutory deadlines for action.¹¹

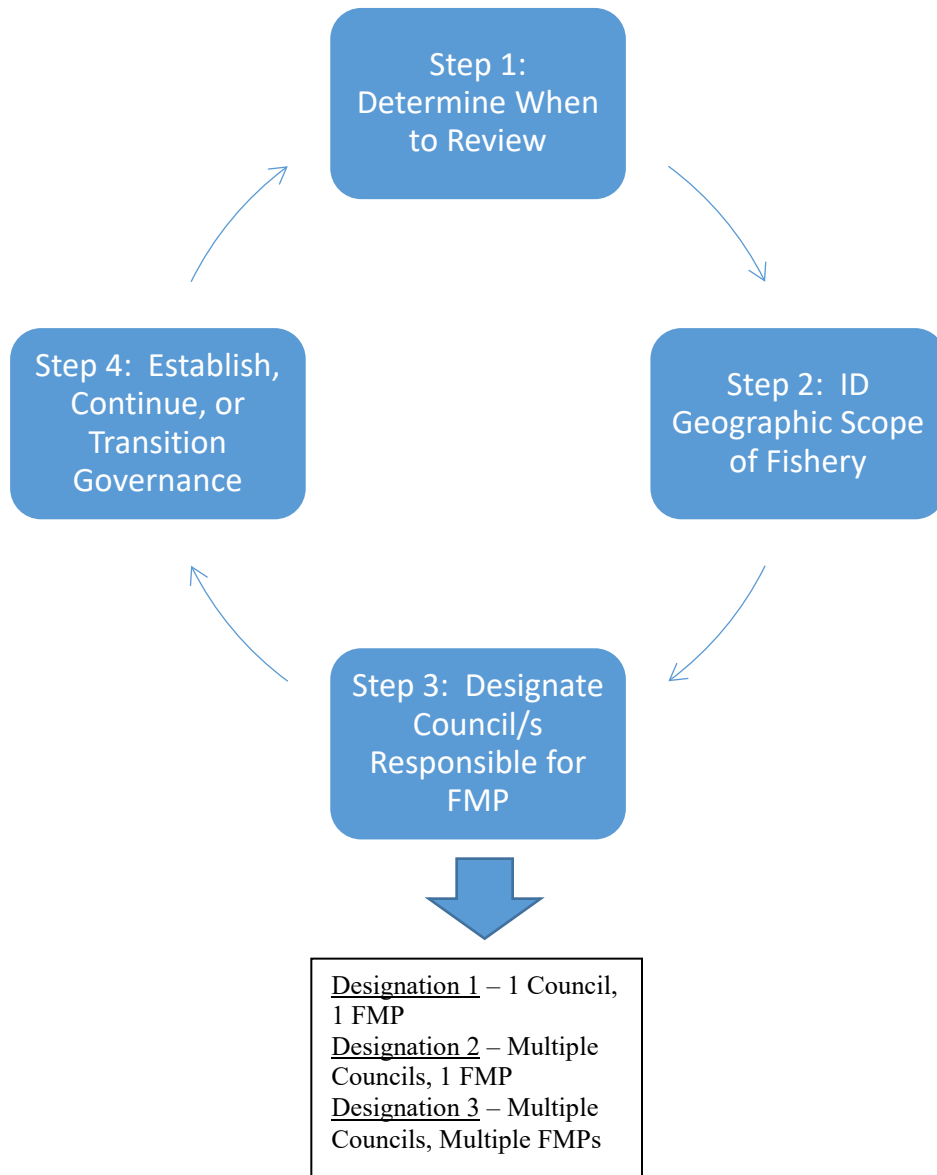
In addition, there is a presumption that, during the 2-year period following the notification of revised designations, any modifications to allocations or permitting requirements should not be undertaken by the Council that historically led the FMP. Any such modifications should be part of the development of the new FMP(s) or amendments.

When transitioning to a new Council governance structure, NOAA Fisheries and the Councils should seek to mitigate disruptions to the degree practicable, and provide for:

- The existing FMP and regulations should remain in-place until superseded or amended by the responsible Council(s).
- Phased-in transition. The transition period should be adequate for the receiving Council to prepare sufficient staffing responsibility. This includes providing for transfer of knowledge between Council staff and SSCs. Where applicable, NOAA Fisheries regional offices and science centers will similarly need to prepare for appropriate transfer of knowledge and data collection and analysis responsibilities. [We are seeking additional input on this section from the CCC, particularly with regards to management during a transition].
- Deadlines and time targets.
- Transition plan that addresses permitting and allocation issues.
- Plans for future adaptability that balance the need to respond to shifting stocks with the need for sufficient long-term stability to support investment in infrastructure.
- Data collection and any necessary modifications to methods.
- A data management plan addressing data storage, data integration, and shared data access.
- [We are seeking additional input on this section from the CCC, particularly with regards to addressing the need to balance stability with the need for adaptability].

¹¹ In the event that special requirements or deadlines of the MSA are triggered, NMFS will work with the relevant Council/s to determine roles and responsibilities for compliance. For example, MSA provides that, within 2 years after notification that a fishery is overfished, the appropriate Councils shall prepare and implement an FMP or amendment or proposed regulations. 16 U.S.C. 1854(e)(3).

APPENDIX 1: Flow Chart of Process



APPENDIX 2: Specific Considerations and Recommendations for Each Potential Designation

One Council, One FMP for entire range of the fishery

Considerations:

- Challenges for stakeholders from other jurisdictions to provide meaningful input and/or have access to the fishery.
- Cost-effectiveness and efficiency in terms of centralizing decision-making within one body
- Costs of management and enforcement.
- Ability to provide timely management responses.

Recommendations:

If this option is selected, the following are recommended:

- Provide for consistent use of committees and liaisons.
- Allow liaisons from adjacent Councils to vote on committee decisions.¹²
- Conduct hearings and meetings in other jurisdictions and/or enable meaningful participation in a virtual setting.
- Partner with adjacent Council(s) on stakeholder outreach.

Multiple Councils, One FMP

Considerations:

- Provides for more representation of relevant stakeholders.
- Determination of which Council has lead (and therefore which Scientific and Statistical Committee (SSC) provides advice) can have significant implications.
- It will be necessary to specify who is responsible for collection, management and provision of data.
- Councils will need to clarify roles of the SSCs regarding authorities and provision of advice to ensure that the ACL is appropriately identified and utilized.
- Less efficient in terms of staffing and reaction time.

Recommendations:

If this option is selected, the following are recommended:

- Consider use of frameworks¹³ to allow Councils to move unilaterally on issues, and/or management units, affecting only their interests and to support advanced planning and if-then scenarios to reduce need for coordination in predictable situations that affect the interests of all relevant Councils.

¹² A Council could demonstrate commitment to providing for input from stakeholders in other geographic areas by structuring their committees to include voting representation from other jurisdictions. For example, a Council could create fishery committees that provide for one vote for each state that lands at least 8% of landings.

¹³ "Frameworks" generally refers to mechanisms in an FMP and regulations for implementing recurrent, routine, or foreseeable actions in an expedited manner (e.g., in-season closures, quota adjustments, etc.). See Operational Guidelines for the Magnuson-Stevens Fishery Conservation and Management Act Fishery Management Process (October 25, 2017) at Appendix 2, sections C(2)(v) and D. Frameworks, and subsequent regulatory actions taken pursuant to them, must be developed and implemented consistent with requirements of the MSA and other applicable law, including the Administrative Procedure Act, National Environmental Policy Act, Endangered Species Act, and Marine Mammal Protection Act. *Id.*

- Councils should clearly identify processes for review and approval regarding fishery management decisions and FMP amendments.

Multiple Councils, Multiple FMPs

Considerations:

- If a stock is not managed as a unit throughout its range, there must be strong justification (per NS 3 and NS 3 guidelines).
- How to facilitate effective coordination between SSCs, and between Science Centers (if applicable), for providing advice.
- Designating responsibilities for collection, management, and provision of data.
- How to ensure overfishing is prevented.

Recommendations:

If this option is selected, the following are recommended:

- Develop a plan to ensure that Councils (including SSCs) coordinate on appropriate level and allocation of fishing mortality across jurisdictions.
- If Councils manage separate stocks of fish, stocks should be monitored for changes in biological stock structure.



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 27, 2023
To: Council
From: Jason Didden
Subject: 2024-2025 Atlantic Mackerel Specifications

The Mackerel, Squid, and Butterfish Monitoring Committee met via webinar on July 27, 2023 to review Atlantic mackerel (mackerel) specifications and make recommendations based on the Scientific and Statistical Committee's (SSC) Acceptable Biological Catches (ABCs). The Monitoring Committee's longfin squid discussions are summarized in the longfin squid briefing materials tab.

Due to a change in overfishing status, the process requires additional peer review for the recent mackerel assessment. The SSC has also suggested additional analyses that may be presented for peer review (planned for September 2023). Therefore mackerel specifications will have to be approved on a preliminary basis and may need to be revisited in December 2023 after the SSC considers the peer review at an October 2023 SSC meeting.

Members of the Monitoring Committee on the call included Jason Didden, Carly Bari, Lisa Hendrickson, Kiersten Curti, and Daniel Hocking. Other attendees included Alissa Wilson, Brad Schondelmeier, Gerry O' Neill, James Boyle, Katie Almeida, Maria Fenton, Meghan Lapp, Melissa Smith, Renee Zobel, "dj," and "Todd."

The SSC recommended ABCs of 2,726 metric tons (MT) for 2024 and 3,900 MT for 2025. For this fishery, first Canadian catches are deducted to determine the U.S. ABC/Annual Catch Limit (ACL). The Canadian fishery was generally closed for the 2022-2023 fishing years, and the Canadian assessment recorded 74 MT of landings in 2022. Given recent Canadian management decisions, the Monitoring Committee recommends deducting 74 MT for 2024/2025 specifications for a U.S. ABC/ACL of 2,652MT/3,826 MT.

Next, recreational catches and commercial discards are deducted to determine landings available for the U.S. commercial quota. No management uncertainty buffer is currently used, but no ACL overages have occurred in this fishery. The Monitoring Committee recommended deducting the status-quo for recreational catch, 2,143 MT. This amount was set in the last mackerel rebuilding action to account for likely recreational catch with a 20-fish trip limit, first implemented in 2023. Without 2023 catch information, and reviewing recent and historic variability in recreational catch estimates, the Monitoring Committee could not find justification to change the recreational set-aside. Changes to recreational measures (i.e. the 20-fish limit) are complicated by the majority of catch occurring in state waters, and would best be addressed through a separate

action if the Council wanted to consider such changes. The status-quo 115 MT commercial discards set-aside seems reasonable to maintain given recent and historic discard estimates, which in the last ten years have usually been below 100 MT but have been as high as 199 MT. Setting aside any less for recreational catch or commercial discards would add the risk of more substantial ACL overages (and paybacks) in the future.

Given the SSC's ABCs, and setting aside 74 MT for Canada, 2,143 MT for recreational catch, and 115 MT for commercial discards, the remainder for commercial landings is 394 MT for 2024 and 1,568 MT for 2025.

Monitoring Committee members are still analyzing possible incidental trip limit options for limited access and open access mackerel participants that should restrain landings to these low levels. Results will be posted to the briefing book website as soon as possible.

Additional supporting materials in this tab include a memo regarding potential emergency action in 2023, the staff ABC memo to the SSC, the Advisory Panel Fishery Performance Report, the staff Fishery Information Document, and two letters from Fisheries & Oceans Canada. The summary of the SSC meeting relating to mackerel is in the Committee Reports tab.



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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 27, 2023
To: Chris Moore
From: Jason Didden
Subject: 2023 Atlantic Mackerel Emergency Action

Staff recommends that the Council request NMFS take emergency action to limit directed fishing for mackerel in 2023 as soon as possible. In addition, the Council should recommend a 20,000-pound trip limit for limited access permits to reduce directed fishing but still allow for some incidental catches for herring fishery participants (who mostly also have limited access mackerel permits).

Open access mackerel permits currently have a 20,000 pound trip limit that reduces to 5,000 pounds per trip when the directed fishery closes. The recommendation would also include lowering the trip limit for open access permits to 5,000 pounds.

Projections indicate that landing the full 2023 quota will likely lead to overfishing in 2023. Limiting additional directed fishing will help to mitigate this situation.

For additional details regarding Atlantic mackerel stock status, please refer to the July 2023 Scientific and Statistical Committee meeting summary in the Committee Reports tab.



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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 18, 2023
To: Chris Moore, Executive Director
From: Jason Didden, staff
Subject: Lower Atlantic Mackerel ABCs recommended for 2024-2025

Summary

1. Stock biomass has not increased as predicted.
2. Staff recommends an ABC of 3,314 metric tons (MT) for 2024 and 2025 to rebuild the stock and avoid excessive regulatory discards.

Current Measures and Review of Prior SSC Recommendations

The primary measures used in the mackerel fishery to control catch include set-asides for Canadian catch, recreational catch, and discards, as well as tiered limited access and weekly quota monitoring that is coupled to closure triggers and post-closure trip limits.

The 2023 Acceptable Biological Catch (ABC) of 8,094 metric tons (MT) was based on the mackerel rebuilding plan and a *fishery mortality rate* (F) of 0.12, which was predicted (based on the 2021 assessment) to have a 61% probability of rebuilding the mackerel stock by 2032. The rebuilding projections assume that future recruitment stays low near recent (now 2009-2022) median recruitment when spawning stock biomass (SSB) is low and then the projections assume that as SSB increases, future recruitment increases to near (but somewhat below) 1975-2022 median recruitment (which is what the stock's rebuilding goal is based on). Since the Canadians did not open their mackerel fishery in 2023, total 2023 catch now appears unlikely to exceed 5,953 MT (the potential Canadian catch stays set-aside).

Recent Catch and Landings

In 2022, U.S. commercial landings declined to the 2nd lowest amount since 1996 after being relatively stable since 2012. Recreational catch declined by 29% from 2021 to 2022 after being relatively stable from 2018-2021.

Stock Status and Biological Reference Points

Based on the 2023 management track stock assessment, the stock is still overfished – declining back to an all-time low in 2021 and increasing somewhat in 2022. Due to relatively low U.S. removals in 2022 and the near-total closure of the Canadian commercial fishery in 2022, overfishing (updated to $F_{msy-proxy} = 0.21$) appears to have ended for the first time in 35 years ($F_{2022} = 0.18$). However, the target biomass and maximum sustainable yield proxy catch continue to decline. The change in overfishing may require additional peer review of the draft assessment.

Staff Recommendation

Considering the information below, an ABC of 3,314 MT is recommended by staff for both 2024 and 2025 because this ABC should A) facilitate continued rebuilding by 2032 with the Council's 61% probability target (remaining consistent with the overall rebuilding plan), B) avoid a scenario where regulatory discarding becomes excessive, C) account for potential recreational catches, and D) allow some continuous collection of fishery-dependent data for future assessments. An ABC of 3,314 MT would be substantially lower than the standard re-calculated rebuilding projections from the direct assessment model outputs. Supporting information:

1. The Council's previous action was designed to have a 61% chance of rebuilding the Atlantic mackerel stock by 2032.
2. The last two assessments (2021, 2023) indicate the assessment model has been over-predicting both the terminal year biomass estimates and stock rebuilding rate.
3. The relatively high 2022 recruitment estimate is projected to cause a rapid increase in biomass that is inconsistent with experiences from recent assessments.
4. Staff requested a sensitivity analysis to examine the impact on projected rebuilding if once again the strong terminal year (2022) recruitment (Age 1 fish) does not result in the expected biomass gains. The analysis indicated that if the 2022 recruitment results in 65% less Age 2 fish than expected in 2023, a substantially lower F of 0.07 would be required to rebuild the stock by 2032 (with 61% confidence). Age 2 fish were reduced by 65% because recent median recruitment is 65% lower than the 2022 estimated recruitment, and modeling limitations would not allow just scaling down the 2022 recruitment estimate. The analysis illustrates the sensitivity of the standard projections to strong terminal year recruitments and assumed survival into older fish. An F of 0.07 would result in 2024-2025 ABCs of 2,726 MT and 3,900 MT (see spreadsheet on July 2023 SSC meeting page reporting results of staff-requested sensitivity analysis).
5. A mackerel moratorium or very low trip limits will create regulatory discards while further limiting the data for the next assessment in 2025.
6. 2022 recreational catch could be a low statistical outlier, and the previous recreational catch set-aside of 2,143 MT still seems reasonable. We do not yet have data on the impacts of the 20-fish possession limit implemented for 2023.
7. The U.S. assessment is generally consistent with the Canadian assessment. Given recent Canadian policy choices, it seems likely that Canadian commercial catches will stay low for the near future.
8. Staff conferred with NMFS quota monitoring staff, and based on 2021-2023 data, if limited access vessels were limited to 20,000 pounds per trip and open access vessels were limited to 5,000 pounds per trip, commercial U.S. mackerel landings (largely incidental) in 2024 and 2025 would not be expected to exceed 1,000 MT.
9. Combining expected Canadian catch, recreational catch, discards, and U.S. commercial incidental landings would result in a catch of approximately 3,314 MT in 2024.
10. Pending consultation with the Monitoring Committee, staff will likely recommend that the Council request NMFS take emergency action to close directed mackerel fishing for the remainder of 2023 given that the anticipated F from the SSB sensitivity analysis would lead to overfishing if the full quota is caught (predicted $F_{2023}=0.23$).



Atlantic Mackerel Fishery Performance Report July 2023

The Mid-Atlantic Fishery Management Council's (Council) Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP) met via webinar to review the Longfin Squid and Atlantic Mackerel Fishery Information Documents and develop Fishery Performance Reports. Separate reports were created for each species/fishery. The primary purpose of the report is to contextualize catch histories for the Scientific and Statistical Committee (SSC) by providing information about fishing effort, market trends, environmental changes, and other factors. AP member comments are not consensus or majority statements – the summary below may represent the perspective of one or multiple AP members. Some staff follow-up information has been added and noted where applicable.

Advisory Panel members present: Dan Farnham Jr, Eleanor Bochenek, Emerson Hasbrouck, Greg DiDomenico, Jeff Kaelin, Katie Almeida, Meghan Lapp, Pam Lyons Gromen, Peter Kaizer, and Robert Ruhle

Others present: Jason Didden, Peter Hughes, Mark Holliday, Alissa Wilson, BB, Brad Schondelmeier, Carly Bari, Hannah Hart, Jessica Blaylock, Maria Fenton, and Mark Binsted.

Trigger questions posed to the AP to generate discussion:

1. What factors have influenced recent catch (markets, environment, regulations, etc.)?
2. Are the current fishery regulations appropriate? How could they be improved?
3. What would you recommend as research priorities?
4. What else is important for the Council to know?

Market/Economic Conditions

Mackerel demand has been strong for years – markets have not been a limiting factor. Persistent inability to supply product consistently will eventually lead to market problems for the U.S. industry.

Environmental Conditions

Nothing particularly unusual was reported; there are few reports of fish from more southern areas.

Management Issues

The New England Fishery Management Council's (NEFMC) inshore mid-water trawl buffer zone affected landings when in operation – the buffer zone started February 2021 and ended (court order) March 29, 2022. It was noted that the NEFMC is revisiting buffer zones.

The lack of herring RSA quota has limited mackerel landings later in the year in recent years – but trawl boats are allowed to catch herring in the third trimester in area 1A which does allow trawled herring/mackerel catch.

Horsepower restrictions, and resulting speed limitations, may be affecting the size of the fish that the commercial fishery can catch (larger fish are faster); also possible research topic.

An 89 MT river herring and shad (RH/S) cap would have substantially impacted mackerel landings in 2023 at the observed RH/S interaction rates early in the year. An 89 MT RH/S cap would also have degraded the estimation protocols in terms of getting enough observer trips to use representative in-season data. (Staff note: the fishery looked likely to close earlier this year due to the RH/S cap before additional observer data reduced the RH/S cap ratio and cap estimates.)

A lower RH/S cap may have incentivized a change in 2023 behavior, making it hard to predict what might have happened in 2023 at a lower RH/S cap in terms of potential closures.

The criticism of the mackerel fishery has made the creation of a fishery performance report moot – in the current situation we can't catch the quota we have, and therefore can't provide fishery-dependent information which will increase assessment uncertainty.

Other Issues

Recreational catch and its precision and impact on biomass remain a concern. There was discussion regarding the 29% drop (totals of 10.7 million fish to 7.6 million fish) in mackerel catch from 2021 to 2022 after relative stability from 2018-2021. Follow-up examination of MRIP estimates indicates that while catches declined across private/rental boat modes in Maine, Massachusetts, and New Hampshire (this group accounts for most mackerel catch each year), about 2/3 of the total decline occurred in the Massachusetts private/rental boat mode group. The numbers of angler trips for this estimate stayed about the same, so angler effort does not appear to have been the cause of the decline in catch. For the Massachusetts' private/rental boat mode estimates, observed harvests (MRIP type As) were similar in 2021 and 2022 with most of the decline represented by lower rates (catch per angler trip) for *reported but not observed harvests* (MRIP B1s) and *reported discards* (MRIP B2s). There was also discussion whether state permitting may shift some reported catch from the recreational sector to the commercial sector, but that should only potentially affect 2023 and future catches.

The potential use of size limits and US-Canada alignment remains a concern. The bulk of use of the available mackerel quota should be dedicated to more selective gear (e.g. purse seining).

With Industry-Funded Monitoring in the Herring Fishery suspended, we also get less mackerel observer coverage to support RH/S cap monitoring. The program was suspended due to the inability of the Agency to pay for its portion of the program. The current observer case at the Supreme Court may impact the ability of the Agency to require industry-funded observer coverage outside of the North Pacific (which is also revenue capped), foreign fishing, and/or

limited access privilege programs (aka ITQs). It's regrettable that the voluntary bycatch avoidance program is no longer in operation – the program was important re: RH/S avoidance. It's worth exploring potentially using Standardized Bycatch Reporting Methodology (SBRM) modifications to direct more observer coverage to fleets relevant for RH/S.

Research Priorities

Research priorities were reviewed, but no related input was provided.

Additional Public Input:

No additional input was provided.



Atlantic Mackerel Fishery Information Document

July 2023

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for Atlantic mackerel (“mackerel” hereafter), with an emphasis on 2022. Data sources for Fishery Information Documents include unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and should be considered preliminary. For more resources, including previous Fishery Information Documents, please visit <http://www.mafmc.org/msb>.

Key Facts

- Mackerel began a rebuilding program on November 29, 2019. A revised rebuilding plan was implemented in 2023, based on catches that had a predicted 61% probability of rebuilding the stock by 2032.
- The 2023 rebuilding Acceptable Biological Catch (ABC) is 8,094 metric tons (MT); the predicted 2024 rebuilding ABC was 9,274 MT.
- The results of the 2023 mackerel management track assessment are not yet available. NMFS Northeast Fisheries Science Center staff will use those results to project catches that have a 61% probability of rebuilding by 2032
- The 2023 Canadian assessment showed a continued decline in spawning stock size estimates from 2020 to 2021/2022. Canadian Spawning stock size estimates are at an all-time low.
- The mackerel fishery was not constrained by its river herring and shad (RH/S) cap in 2021 or 2022.

Basic Biology

Mackerel is a semi-pelagic/semi-demersal (may be found near the bottom or higher in the water column) schooling species, primarily distributed historically between Labrador (Newfoundland, Canada) and North Carolina. The stock is considered to comprise two spawning contingents: a northern contingent spawning primarily in the southern Gulf of St. Lawrence and a southern contingent spawning in the Mid-Atlantic Bight, Southern New England and the western Gulf of Maine. The two contingents mix during winter months on the Northeast U.S. shelf. The Canadian fishery likely primarily catches the northern contingent while the U.S. fishery appears to catch both contingents.

Mackerel spawning occurs during spring and summer and progresses from south to north as surface waters warm. Atlantic mackerel are serial, or batch spawners. Eggs are pelagic. Post-larvae gradually transform from planktonic to swimming and schooling behavior at about 30-50 mm. Almost all fish are mature by age 3 in most years. Age 2 maturity appears to vary between around 50% to nearly 100%. Atlantic mackerel are opportunistic feeders that can ingest prey either by individual selection of prey organisms or by passive filter feeding. See <https://www.nefsc.noaa.gov/nefsc/habitat/efh/> for more life history information.

Status of the Stock

Based on a 2018 assessment (NEFSC 2018, available at <http://www.mafmc.org/ssc-meetings/2018/may-8-9>), the mackerel stock was declared overfished, with overfishing occurring based on data through 2016. A 2021 management track assessment (MTA) indicated rebuilding from 2014 to 2018 but the stock was at only 24% of the biomass rebuilding target in 2019 (and still overfishing). However, the productivity of the stock appears to have declined - in the 2021 MTA, the estimated proxy for Maximum Sustainable Yield declined by 17% to 34,103 metric tons (MT) compared to the previous assessment.

Historical assessments (which used different methods and data) appear to have been substantially over-optimistic about the stock's productivity: the 1997 mackerel allowable biological **catch** was specified about **ten times higher than** what we now think the **total SSB** was in that year.

A 2023 MTA that uses data through 2022 is pending and will be posted to the relevant meeting pages as soon as possible. A 2023 Canadian assessment¹ showed the Northern Mackerel Contingent continued a decline from 2020 to 2021/2022 (to all-time lows). The Canadian and U.S. assessments share much of the same data but the U.S. assessment combines the Canadian egg data with egg data collected by a U.S. Ecosystem Monitoring survey conducted in late May and June.

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (the Council or MAFMC) established management of mackerel in 1978 and the management unit includes all federal East Coast waters. Expected Canadian landings are deducted from the total Acceptable Biological Catch (ABC) that is recommended by the Council's Scientific and Statistical Committee (SSC), but there is no formal sharing agreement. If Canada keeps its fishery closed, as occurred in 2022 and 2023, the fish set aside for expected Canadian catch remain set aside.

Access is limited with several tiers having different trip limits. Stricter trip limits are triggered when the quota is approached. Additional summary regulatory information is available at <https://www.fisheries.noaa.gov/region/new-england-mid-atlantic>.

After the initial rebuilding plan appeared infeasible due to slow stock growth, a revised rebuilding plan was implemented for 2023 to achieve a 61% probability of rebuilding the stock by 2032. The 2023 ABC is 8,094 MT. From the ABC, 2,197 MT was deducted for potential Canadian landings,

¹ <https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41111126.pdf>

2,143 MT was deducted for expected recreational catch, and 115 MT was deducted for expected commercial discards, resulting in a commercial quota of 3,639 MT. The initial series of rebuilding catches is provided in Table 1 with the 2024+ catches conditional on the expected increase in biomass.

Table 1. Revised rebuilding plan catch and initial biomass trajectory.

	Catch (MT)	Biomass (MT)
2023	8,094	80,745
2024	9,274	91,738
2025	10,540	103,756
2026	11,906	116,857
2027	13,408	131,291
2028	15,004	146,553
2029	16,631	162,239
2030	18,261	177,731
2031	19,814	192,045
2032	21,215	204,796

Fisheries

Figure 1 describes mackerel catches (all known sources) 1960-2019 and highlights the scale of the early foreign fishery in the late 1960s and 1970s. Figures 2-3 describe domestic landings, ex-vessel revenues, and prices (inflation adjusted) since 1996. Domestic landings dropped dramatically from 2006-2011 and have been relatively low since. Prices have shown an increasing trend since 2001 and the price jump in 2022 may have been associated with the complete Canadian fishery closure in 2022. Figure 4 describes preliminary weekly landings throughout the year for 2023 and 2022. Early season landings were higher in 2023 compared to 2022.

Table 2 describes 2022 commercial mackerel landings by state and Table 3 describes 2022 commercial mackerel landings by gear type. Table 4 describes 2021 and 2022 commercial mackerel landings by NMFS statistical area. While variable, the landings patterns are generally consistent with recent operation of the fishery.

Figure 5 describes 2018-2022 Atlantic mackerel recreational annual total catches (numbers of fish, VA-ME, all modes combined, all areas combined) and indicates stable catches from 2018-2021 with a decline in 2022. Most recreational catch is retained, most occurs in the private/rental mode, and most catch occurs in state waters (predominantly Massachusetts, New Hampshire, and Maine). Data after 2018 are not affected by calibrations that were applied to earlier data due to methods changes to the Marine Recreational Information Program (MRIP).

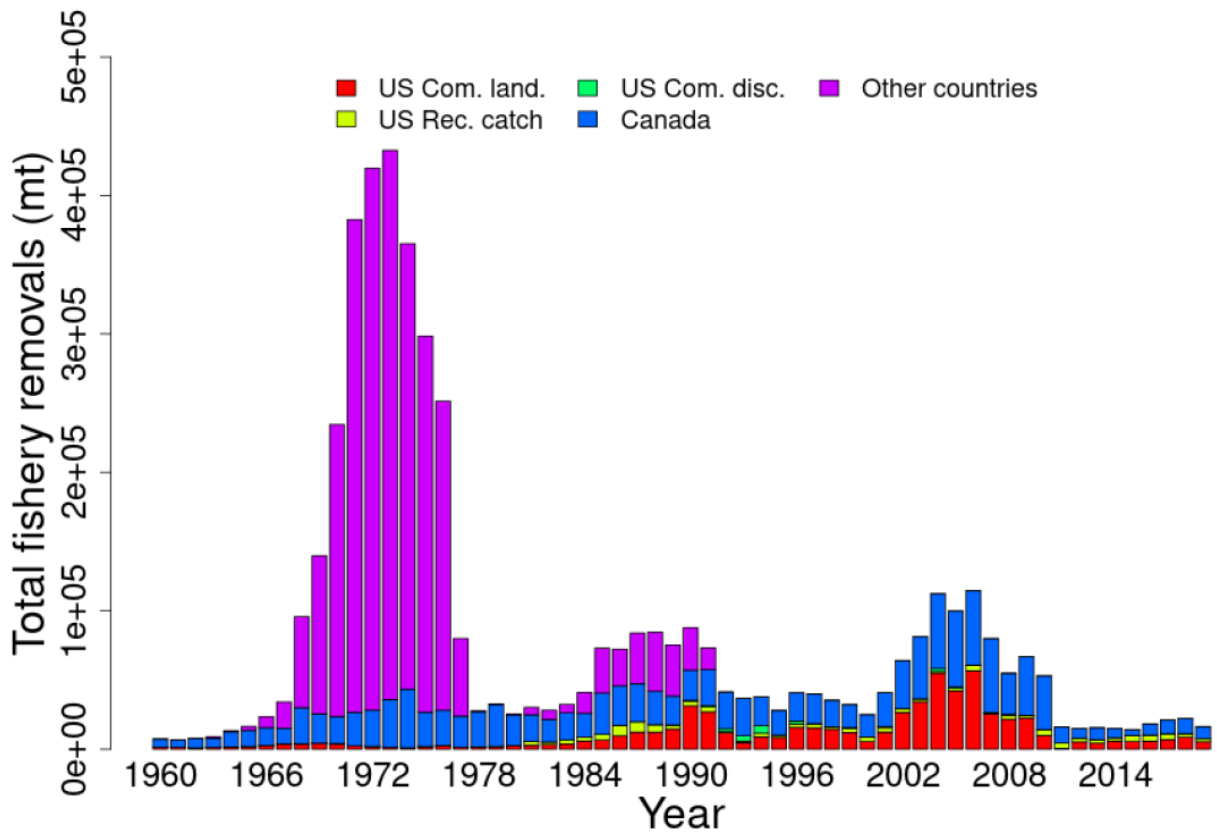


Figure 1. Total catch of northwest Atlantic mackerel between 1960 and 2019 by all known sources. U.S. recreational catch represents recreational landings plus discards, Canada represents Canadian landings (discards are not available), and other countries represents landings by all other countries.

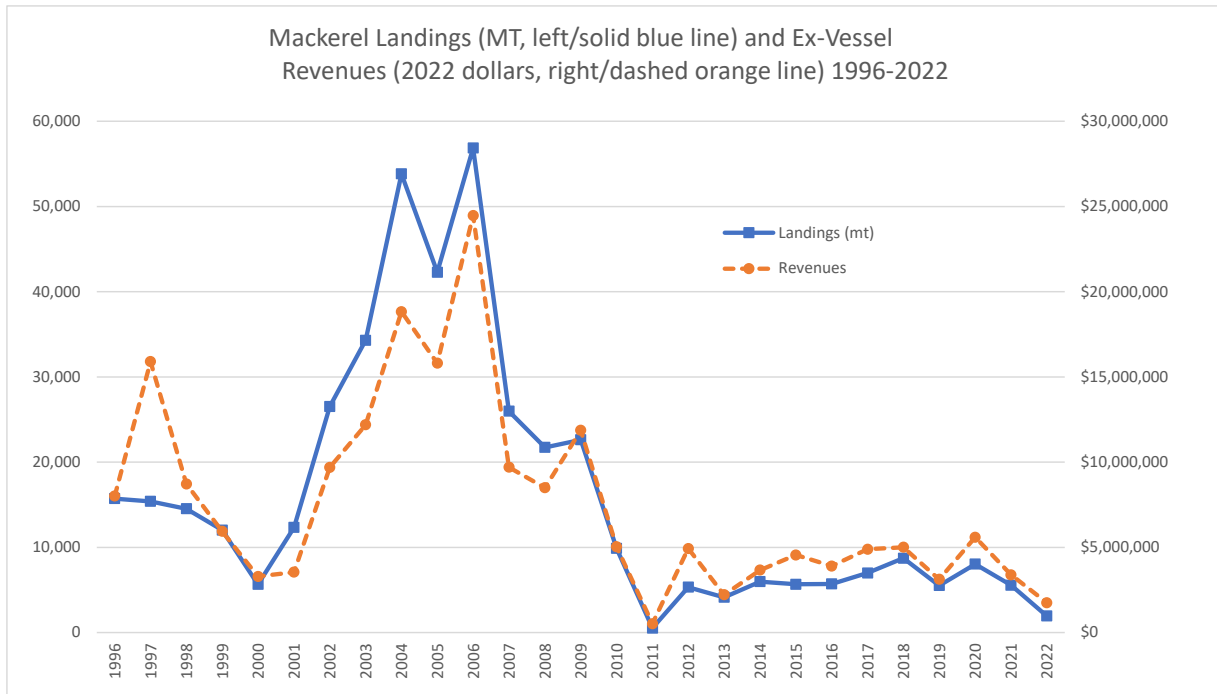


Figure 2. U.S. Mackerel Landings and Mackerel Ex-Vessel Values 1996-2022. Source: NMFS unpublished dealer data. [PRELIMINARY]

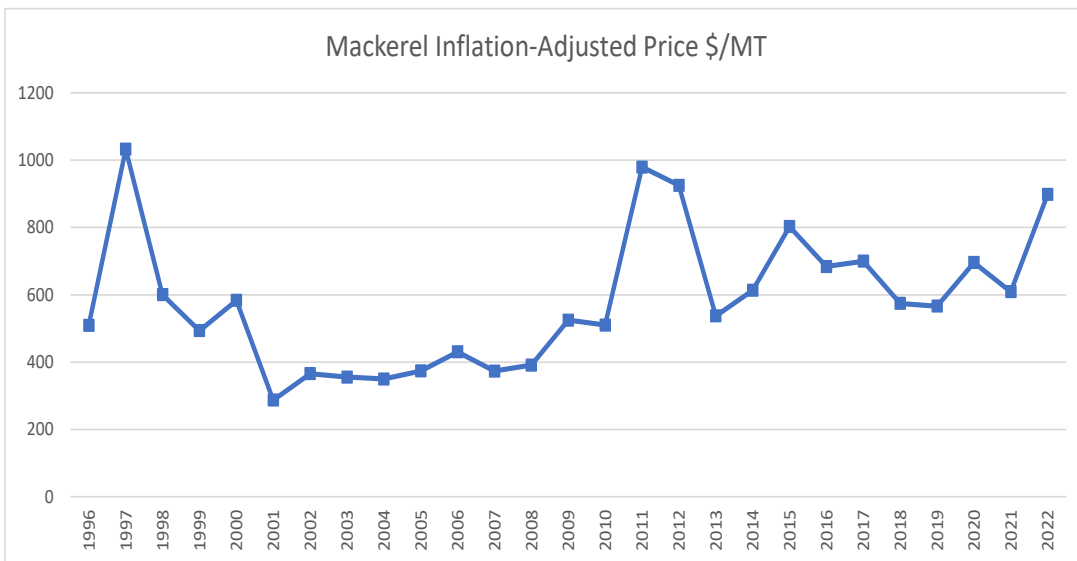


Figure 3. Ex-Vessel Mackerel Prices 1996-2022, Inflation-Adjusted to 2022 Dollars Source: NMFS unpublished dealer data. [PRELIMINARY]

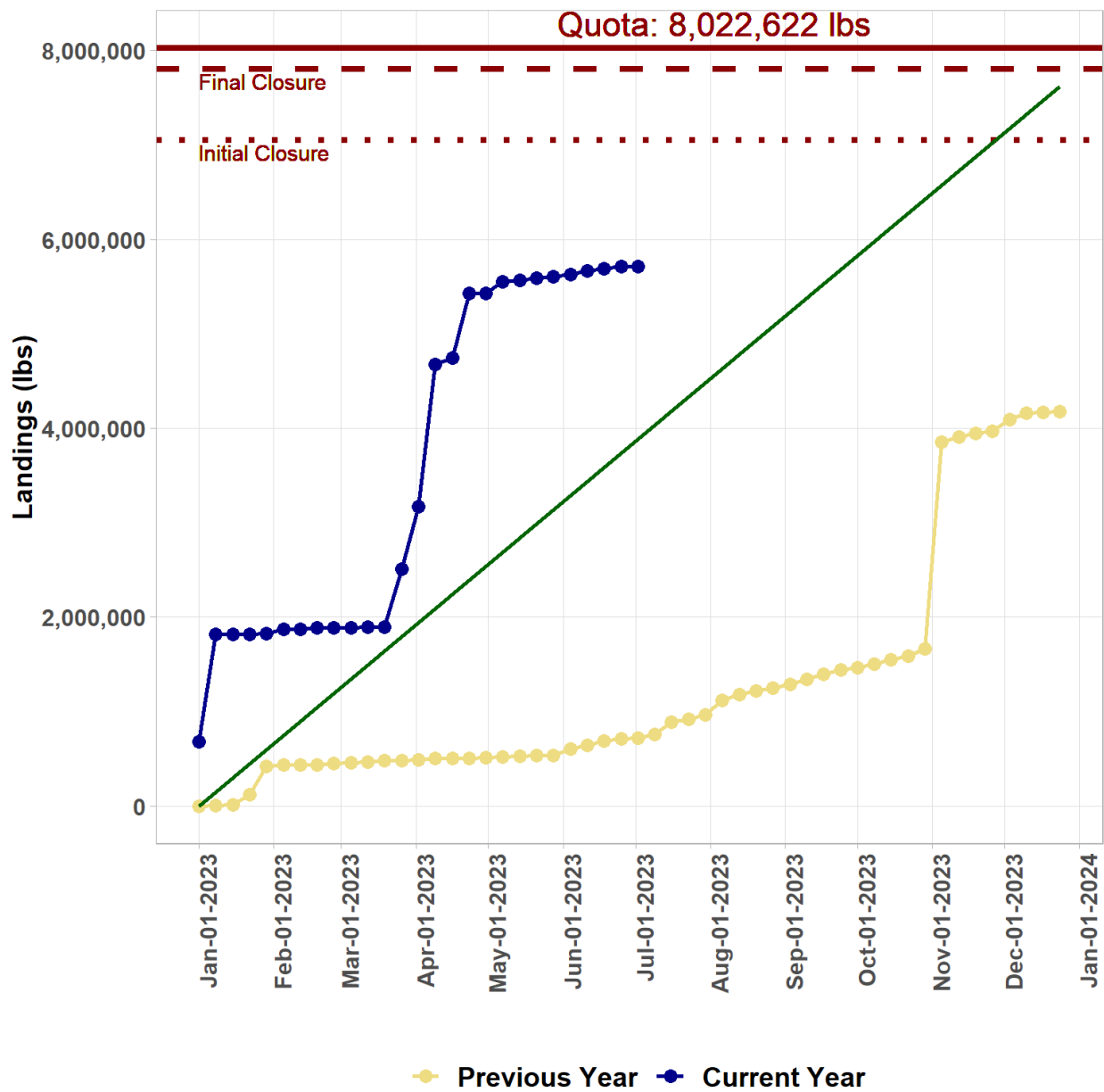


Figure 4. U.S. Preliminary Mackerel landings; 2023 in blue, 2022 in yellow-orange. As of July 6, 2023. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

Table 2. Commercial Mackerel landings (live weight) by state in 2022. Source: NMFS unpublished dealer data.

State	Metric_Tons
MA	1,530
ME	302
RI	88
NY	11
Other	17
Total	1,948

Table 3. Commercial Mackerel landings (live weight) by gear in 2022. Source: NMFS unpublished dealer data.

GEAR	MT
TRAWL,OTTER,MIDWATER	1,155
HAND LINE, OTHER	249
LONGLINE, BOTTOM	247
UNKNOWN	165
TRAWL,OTTER,BOTTOM,FISH	90
Other	42
Total	1,948

Table 4. Commercial mackerel landings by statistical area in 2021 and 2022. Source: NMFS unpublished VTR data.

2021		2022	
Stat Area	Metric Tons	Stat Area	Metric Tons
522	2,023	514	1,412
521	1,854	522	147
612	992	521	47
514	450	537	35
Other/CI	332	539	25
Total	5,652	611	22
		616	12
		Other/CI	27
		Total	1,725

Note: VTR expected to be lower than dealer database due to state landings.

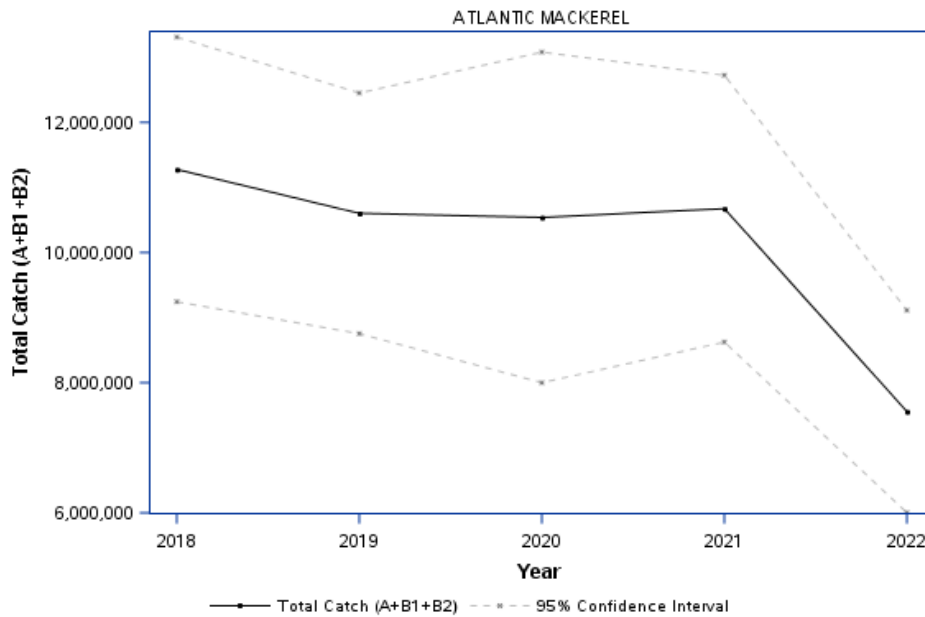


Figure 5. 2018-2022 Atlantic mackerel recreational total catches (numbers of fish), annual, VA-ME, all modes combined, all areas combined Source: NMFS MRIP query <https://www.fisheries.noaa.gov/data-tools/recreational-fisheries-statistics-queries>.

(Data after 2018 not affected by calibrations that must be applied to earlier data due to methods changes.)

Non-Target Catches and Discards

Environmental Assessments for mackerel specifications developed by staff include tables of incidental catches using a directed fishery definition of at least 50% of retained catch being mackerel. Since the Standardized Bycatch Reporting Methodology focuses on discards of managed stocks rather than discards in managed fisheries, staff analyses of discards vary fishery by fishery depending on data availability and historical practices. Staff updated previous analyses using 2019-2022 data – 2020 data was severely impacted by Covid-19 but most observed mackerel trips would generally occur early in the year before 2020’s disruptions. There were only 14 total observed mackerel trips (as defined) during this time period.

Using discard ratio data from these observed hauls and 2019-2022 average mackerel landings (5,267 MT), Table 5 below approximates annual catch/discards in the directed mackerel fishery from 2019-2022, for species with extrapolated catch of at least 10,000 pounds. The method used for the estimates in the table is a custom staff analysis, and is best considered as a relative indicator of species that may be affected by the fishery rather than precise amounts (especially given the low number of observed trips in this fishery). On the trips identified in this analysis, the 2019-2022 overall discard rate was 0.4 % (similar to previous analyses).

Preliminary weekly 2023/2022 river herring and shad (RH/S) cap performance is described in Figure 6 (next page).

The observer program creates individual records for some species of interest, mostly larger pelagics and/or less common sharks/rays, as well as tagged fish. However, on these trips only three unknown sharks and one bluefin tuna were noted.

Table 5. Mackerel Target/Non-Target Catches

NE Fisheries Science Center Common Name	Pounds Observed Caught	Pounds Observed Discarded	Of all discards observed, percent that comes from given species	Percent of given species that was discarded	Pounds of given species caught per mt mackerel Kept	Pounds of given species discarded per mt mackerel Kept	Rough Annual Catch (pounds) based on 4-year (2019-2022) average of mackerel landings (5,267 mt)	Rough Annual Discards (pounds) based on 4-year (2019-2022) average of mackerel landings (5,267 mt)
MACKEREL, ATLANTIC	2,238,955	321	2%	0%	2,205	0	11,613,397	1,663
HERRING, ATLANTIC	930,524	1,022	7%	0%	916	1	4,826,604	5,302
BUTTERFISH	20,760	3	0%	0%	20	0	107,680	16
MENHADEN, ATLANTIC	15,492	2	0%	0%	15	0	80,354	8
DOGFISH, SPINY	14,132	9,316	66%	66%	14	9	73,301	48,321
HERRING, BLUEBACK	14,098	892	6%	6%	14	1	73,124	4,628
HAKE, SILVER (WHITING)	7,601	21	0%	0%	7	0	39,427	110
ALEWIFE	6,094	50	0%	1%	6	0	31,608	258
FISH, NK	2,441	2,281	16%	93%	2	2	12,661	11,831

Report Run on: 2023-07-07
 Quota Year: 2023 (January 1, 2023 to December 31, 2023)

Catch Cap	Quota (mt)	Cumulative Catch (mt)	Percent Quota Caught
Atlantic Mackerel River Herring/Shad	129	105.9	82%

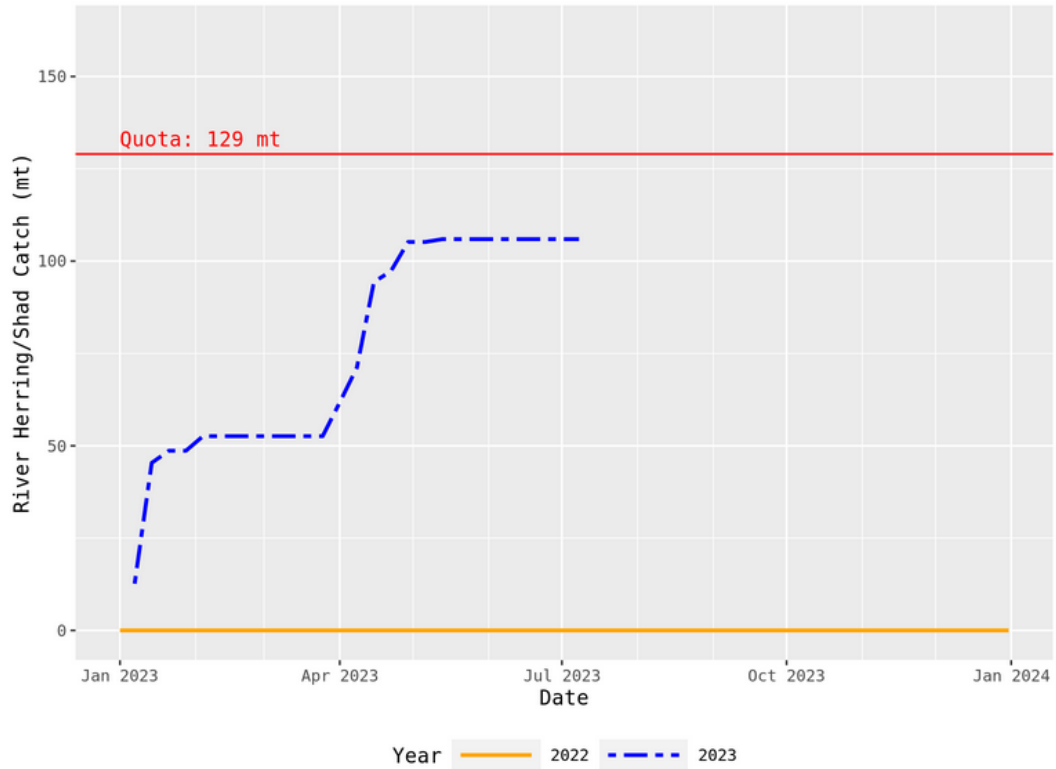


Figure 6. Preliminary Weekly RH/S Cap Monitoring; 2023 in blue, 2022 in yellow-orange. As of July 7, 2023. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

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Dr. Christopher Moore
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201,
Dover, DE 19901
Email: cmoore@mafmc.org

Dear Dr. Moore,

Canada and the United States (U.S.) have a longstanding and productive relationship in collaborative fisheries science and management, as exemplified by the number of bilateral mechanisms we have in place as well as a healthy ongoing dialogue on fisheries issues of mutual concern. Canada values and appreciates the ongoing scientific collaboration between Canadian and U.S. scientists and scientific processes; this work affects a number of important transboundary fish stocks, including Atlantic mackerel. We believe it is important to make use of every opportunity to contribute to each others' understanding of this stock and the fishing pressures upon it so we all have a strong foundation for science-based decision-making.

As the United States is conducting a stock assessment of Atlantic mackerel, Canada wishes to share the results of the Atlantic mackerel stock assessment completed by Fisheries and Oceans Canada (DFO) earlier in 2023, especially as these findings pertain to its transboundary nature. The full report can be found here: https://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2023/2023_015-eng.html

DFO applies the Precautionary Approach Framework when making decisions regarding harvest levels in Canadian fisheries. Stock status can be defined based on zones (healthy, cautious, critical), which are delineated by reference points; the Limit Reference Point (LRP) is the boundary between the critical and cautious zones, and an Upper Stock Reference Point (USR) is the boundary between the cautious and healthy zones. The LRP represents the stock status below which serious harm is occurring to the stock and there may also be resultant impacts to the ecosystem, associated species and a long-term loss of fishing opportunities.

The Canadian stock assessment for Atlantic mackerel is on a two-year assessment schedule and assesses the northern contingent of the Northwest Atlantic (NWA) mackerel stock. This differs from the U.S. assessment, which assesses the combined NWA stock with both southern and northern contingents.

The latest Canadian stock assessment took place in February 2023 (with data up to 2022) and found that the northern contingent of Atlantic mackerel has been in or near the critical zone, below the stock's LRP, since 2011. This is akin to the stock being in an overfished state. The spawning stock biomass has continued to decline since the last stock assessment in 2021 and was estimated to be at its lowest-observed values of 40 per cent of the LRP in 2021 and 42 per cent of the LRP in 2022.



The age structure of the northern contingent continues to see a loss of older, more fecund individuals from the population compared to the pre-2000 period. The age structure collapsed during a time of high fishing mortality. The last notable recruitment event occurred in 2015 but fish belonging to this cohort only represented a minor proportion (3 per cent or less) of the stock's abundance in 2021 and 2022. This stock typically had fish aged 1-10+, and the erosion of the age structure of the population has increased over time. There were very few fish over age 5 in 2021 and 2022 (3 per cent or less). The age structure of the population in 2021 and 2022 was not dominated by a particular cohort.

The 2023 assessment included an initial investigation of predation pressure on mackerel by various predators in Canadian and U.S. waters, which suggests an overall increase in predation-induced mackerel mortality over the last few decades, with high interannual variability. As additional data on predation of mackerel by various predators becomes available, values used for estimating biomass of mackerel that they consume will be refined.

As part of new Canadian legal requirements to rebuild stocks that are in the critical zone, the 2023 stock assessment estimated the minimum time required for the stock to rebuild in the absence of all fishing. Rebuilding the northern contingent stock to above the LRP with a 75 per cent likelihood in the absence of all fishing ($F=0$; no Canadian spawned fish removed from the water) was estimated to be 6 to 7 years. However, an alternative minimum time to rebuild the stock that accounts for removals beyond control will be used, with an estimate of 7-9 years.

Both contingents mix in winter in deeper warmer waters, on the edge of the continental shelf from Sable Island, Nova Scotia to the waters off Cape Lookout, North Carolina. During this time, they are subject to the U.S. fishing fleet. There is small but significant genetic differentiation between the northern and southern contingents. The level of mixing during winter remains highly uncertain, but is likely large and variable between years. In the latest Canadian assessment, the assumption was that the proportion of northern contingent fish within U.S. landings ranged from 20-80 per cent, in accordance with the most recent knowledge on stock mixing.

With the results of Canada's 2023 stock assessment, DFO has announced the continued closure of the commercial and bait Atlantic mackerel fisheries for the 2023 season to support the rebuilding of this stock. We continue to value the open exchange of information that we have enjoyed with U.S. officials on small pelagic stocks for the purposes of science and management, including Canadian scientists' participation in the U.S. stock assessment, and we look forward to further strengthening collaboration on this species. Canada is optimistic that the Atlantic mackerel stock can rebuild, and we urge the United States to continue the positive steps it has already taken in its rebuilding efforts for this important transboundary stock.

Kind regards,

Mark Waddell
Director General, Fisheries Policy
Fisheries and Oceans Canada



Dr. Christopher Moore
Executive Director
Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201,
Dover, DE 19901
Email: cmoore@mafmc.org

Dear Dr. Moore,

I write to you today to reiterate the urgency and importance of the United States (U.S.) and Canada taking coordinated action on rebuilding Atlantic mackerel stocks. Our two countries have a longstanding and productive relationship in collaborative fisheries management, as exemplified by the number of bilateral mechanisms we have in place, as well as the healthy ongoing dialogue on fishery issues of mutual concern. In that spirit, Fisheries and Oceans Canada (DFO) would like to offer some comments on Atlantic mackerel for consideration in the deliberations of the Mid-Atlantic Fishery Management Council (MAFMC).

As you know, the Honourable Joyce Murray, then-Minister of Fisheries, Oceans, and the Canadian Coast Guard, announced a closure of Canada's Atlantic mackerel commercial and bait fisheries on March 30, 2022, in order to allow the stock to rebuild. On June 28, 2023, this closure was extended for the rest of the 2023 fishing season. Atlantic mackerel recreational and Indigenous food, social and ceremonial fisheries will continue as they make up a small percentage of overall removals, and will be monitored to ensure that our goal of rebuilding this stock is not undermined.

We were encouraged to see that the U.S. significantly reduced its allowable commercial catch in 2022 due to conservation concerns. We also commend your adoption in February 2023 of the new 10-year Atlantic Mackerel Rebuilding Plan, as well as new specifications for 2023. DFO is currently revising the Canadian rebuilding plan for Atlantic mackerel. The plan is expected to be finalized by March 31, 2024.

We have been following the progress of the 2023 U.S. Management Track Assessment Report as we know that current and future management actions under the U.S. Atlantic Mackerel Rebuilding Plan hinge on the result of this update. DFO scientists have participated in this assessment process, and DFO also provided the results of Canada's 2023 Atlantic mackerel stock assessment (northern contingent only) for consideration by the Scientific and Statistical Committee (SSC). As stated in that letter, the Canadian assessment found that the northern contingent has been in or near the critical zone, below the stock's limit reference point (LRP), since 2011. This is akin to the stock being in an overfished state. The spawning stock biomass has continued to decline since the last Canadian stock assessment in 2021 and was estimated to be at its lowest-observed values of 40 per cent of the LRP in 2021 and 42 per cent of the LRP in 2022.



Based on the U.S. Management Track Assessment Report, although the stock is overfished, overfishing is not occurring for the first time in 35 years. The assessment also suggests that this change (overfishing not occurring) is likely owing to Canadian closures and low U.S. removals. However, the results of the sensitivity analysis of the impact of recruitment assumptions on expected biomass gains, requested by MAFMC staff, suggests that current fishing mortality may result in overfishing if the full U.S. 2023 quota is caught.

Considering that the 2023 Management Track Assessment Report and Canada's 2023 Stock Assessment Report are generally consistent with one another, it is important that our two countries adopt complementary approaches to managing and rebuilding the Atlantic mackerel stock.

The MAFMC staff recommendations, published by your organization on July 18, 2023, have increased our confidence that the sacrifices made by Canadian harvesters to rebuild the stock will not be undermined by U.S. catches. That memo suggests that foregone Canadian catch will stay set-aside and that your organization will recommend a lower Acceptable Biological Catch (ABC) and a potential emergency action to close the directed mackerel fishery to avoid the risk of another overfishing event. We were also encouraged by the preliminary recommendation from SSC on July 26 to use a lower fishing mortality level (F_{rebuild}) to calculate the ABC for 2024 and 2025.

Atlantic mackerel plays a critical role in this marine ecosystem. We need Atlantic mackerel – and other pelagic forage stocks – to be healthy to protect our shared ecosystems and support the fisheries of the future. Commercial fishing by both Canadian and U.S. fish harvesters has a significant influence on the status of the Atlantic mackerel stock. If we want to give the stock a fair chance to recover, it is essential that we both minimize this fishing pressure in order to protect spawning fish, which are at the lowest level ever observed.

As we are presently organized, the unilateral decisions of either of our governments have the potential to impact the livelihoods of the other country's fish harvesters. Canada and the U.S. must take action without delay to develop more rigorous cooperation mechanisms and shared management approaches on this stock. With this in mind, we are encouraged that discussions are taking place at every opportunity between our Minister and Dr. Richard Spinrad, the Under Secretary of Commerce for Oceans and Atmosphere & National Oceanic and Atmospheric Administration (NOAA) Administrator, on aligning our approaches. DFO officials value the exchanges that we have enjoyed with U.S. officials on the science and management of small pelagic stocks, and we look forward to closer collaboration with you on this important species.

I urge you to not use the continued closure of Canada's commercial and bait fisheries for Atlantic mackerel, and the resulting reduction in Canadian removals, as an opportunity to maintain a U.S. commercial quota. Such an action would undermine the conservation and rebuilding efforts that both our countries are undertaking and detract from the collaborative bilateral relationship that we currently enjoy on numerous.



I also strongly encourage MAFMC to consider complementary measures to those already taken by Canada in the development of your advice for the management of the U.S. Atlantic mackerel fishery. To this end, we support the MAFMC staff's recommendations to lower the ABC, institute trip limits that encourage a bycatch-only fishery, and to take emergency action to close the 2023 U.S. mackerel fishery to avoid the risk of overfishing. We believe these steps are necessary to rebuild the stock and will ensure the long-term sustainability for both Canadian and U.S. fisheries.

We look forward to ongoing collaboration with the U.S. to support a sustainable fishery for future generations of fish harvesters.

Kind regards,

Mark Waddell
Director General, Fisheries Policy
Fisheries and Oceans Canada



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 28, 2023
To: Council
From: Jason Didden
Subject: River and Herring and Shad (RH/S)

Three documents are included for Council consideration:

1. Staff recommendations regarding RH/S
2. Summary of RH/S Joint Advisory Panel and Committee meeting
3. 2023 RH/S Update

The goal for this agenda item was originally to set 2024-2025 RH/S caps and consider any other recommendations from the RH/S Committee, RH/S Advisory Panel, Mackerel, Squid, and Butterfish Monitoring Committee, and staff. The RH/S Committee recommended an 89 metric ton RH/S cap but given the minimal Atlantic mackerel catch recommendations from the Scientific and Statistical Committee (SSC), there may not be a directed fishery for mackerel in 2024/2025. The RH/S Committee also recommended that the Council particularly consider *exploration of modeling for RH/S bycatch avoidance approaches* during discussions later this year regarding 2024 Council priorities.

The NMFS Northeast Fisheries Science Center (NEFSC) is working on several RH/S analyses referenced in the 2023 RH/S Update that were not available when this briefing book was compiled – if/when the analyses are completed, they will be posted as supplemental briefing materials on the Council’s website.



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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 28, 2023
To: Chris Moore
From: Jason Didden
Subject: RH/S Cap

Given the Atlantic mackerel (mackerel) Acceptable Biological Catches (ABCs) for 2024-2025 are insufficient to support directed mackerel fishing, there is no need to specify or monitor river herring and shad (RH/S) caps for these years. The mackerel fishery will already be operating under measures that are at least as restrictive as those in effect when the fishery is closed by the RH/S cap.

Staff supports the Committee motion to encourage exploration of modeling for RH/S bycatch avoidance approaches. Extending modeling like that detailed in Roberts et al 2023 (summarized in the 2023 RH/S Update) appears more likely to have meaningful long-term impacts on RH/S populations than caps. While the RH/S caps have had some positive impact on RH/S populations (even if just because of the several closures that have occurred), recent genetic analyses indicate that connecting RH/S caps directly to RH/S populations may not be practicable (e.g. Reid et al 2022 summarized in 2023 RH/S Update). Bycatch risk modeling incorporating environmental data may also not produce practicable avoidance approaches (e.g. identify overly general times/areas), but staff believes they warrant additional investigation.



RH/S Committee and AP Meeting Summary

July 13, 2023 Webinar

The Mid-Atlantic Fishery Management Council's (Council) River Herring and Shad (RH/S) Committee and Advisory Panel (AP) met jointly on July 13, 2023 at 9am. The purpose of the meeting was to review the 2023 RH/S Update and develop recommendations for the Atlantic mackerel fishery's RH/S cap, as well as for any future Council RH/S activities.

RH/S Committee Attendees (10 of 12): Sara Winslow (Chair), Emily Gilbert, Peter Hughes, Adam Nowalsky, Chris Batsavage, Kris Kuhn, Michelle Duval, Maureen Davidson, Megan Ware, and Bob Beal.

RH/S AP Attendees (11 of 16): Allison Colden, Eleanor Bochenek, Fred Akers, Greg DiDomenico, Jeff Kaelin, Katie Almeida, Mari-Beth DeLucia, Mark Binsted, Pam Lyons Gromen, Roger Rulifson, and Frank Florio.

Other Attendees: Jason Didden, Wes Townsend, Alan Bianchi, Bailey Bowden, Brad Schondelmeier, Brian Neilan, Carly Bari, Emily Bodell, James Boyle, Jason Boucher, Jesse Hornstein, Jonathan Watson, Kevin Job, Margaret Conroy, Maria Fenton, Meghan Lapp, and Mike Thalhauser

Jason Didden of Council staff first provided an overview of the 2023 RH/S Update.

AP Comments

RH/S migration from Canada should be considered related to any bycatch measures. Tagging returns indicate long-distance migrations occur.

There were opposing views regarding changes to the RH/S bycatch caps. Some AP members thought the cap should be scaled down given reduced mackerel quotas in order to maintain incentive to avoid RH/S, and other AP members thought that the cap should remain at a 129 metric ton (MT) minimum to allow enough activity and observer coverage to occur so that closures in any given year occur only after sufficient data is collected (giving the fleet the opportunity to catch its directed quotas).

The lack of improving RH/S returns despite resources spent toward habitat improvements puts more focus on the Council's actions to address bycatch in the ocean.

Time/area closures failed in the past. New England's plans to revisit inshore buffer/closed areas will result in negative impacts for this fishery.

We have never seen data showing that ocean bycatch is a substantial component of overall RH/S mortality.

The impacts of wind-farm related sound creating a hostile habitat barrier should be considered (e.g. Andersson 2011 - <https://www.diva-portal.org/smash/get/diva2:391860/FULLTEXT01.pdf>)

The very low mackerel quotas will already limit RH/S bycatch.

Committee Motions

I move that the Committee support an 89 MT RH/S cap.

(Substitute by Batsavage/Duval passed 4/2/2)

Discussion centered on the tradeoffs between maintaining incentives to avoid RH/S given many RH/S runs' poor statuses, versus the potential to shut down the mackerel fishery with limited observer data if closures happen near the start of the fishery.

I move to recommend that the Council include in 2024 priorities discussion particular consideration of exploration of modeling for shad and river herring bycatch avoidance approaches.

(Duval/Kuhn passed 8/0/0)

The context for this motion was the recent paper (Roberts et al 2023) on river herring bycatch risk modeling. Concern was expressed that even if near real-time bycatch risk predictions were scientifically feasible, NMFS will not be able to implement near real-time area-based measures.



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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

RH/S Update 2023

August 2023 Council Meeting

Prepared By: Jason Didden, Council Staff

Overview

If the 2023 Atlantic mackerel (“mackerel” hereafter) management track assessment results allow for a directed mackerel fishery in 2024-2025, the Council will set an associated river herring and shad (RH/S) cap for the mackerel fishery. This document reviews several related questions/topics that were previously identified by the Council to help inform RH/S cap setting.

The following 2017 observation from the Mackerel, Squid, and Butterfish (MSB) Monitoring Committee is included for reference as it likely still represents the general sentiment of the Monitoring Committee (a MSB Monitoring Committee meeting will review the RH/S cap performance on July 27, 2023 – see Council website calendar):

The MC noted that its perspective has not substantively changed from last year: given the lack of stock abundance information, a variety of cap options are likely justifiable as long as the Council clearly describes its rationale related to controlling incidental RH/S catch/bycatch - in situations like RH/S where biologically-based catch limits are unavailable, setting the cap is a policy choice. The MC noted that for any cap (and especially a constant cap), because it is not directly tied to RH/S abundance, possibilities exist that it may either become very hard for the fishery to avoid RH/S if their abundances increase, or if RH/S abundances decrease the fishery will not have to work hard to avoid RH/S because there will not be many RH/S around. The first situation would suggest that a cap increase may be warranted while the second would suggest a cap reduction may be warranted. Without better assessment information it is not possible to quantitatively determine the appropriateness of such changes however.

1. Was a cap set and how has the Atlantic mackerel RH/S cap performed?

Table 1 below describes RH/S cap performance for 2014-2023 (2023 partial year to early July). 2014 was the first year of the cap and a partial year of implementation, although the cap was estimated retroactively for the full year. 2018 and 2019 are the only years when cap closures have occurred. The 2023 RH/S cap is 129 metric tons (MT). 129 MT was the amount of RH/S if the ratio of cap to all catch on mackerel trips was about 0.53% and the 2019 mackerel quota was 17,371 MT (or 0.74% applied to just the mackerel quota). ($0.0074 * 17,371 \text{ MT} = 129 \text{ MT}$). The Council has kept the RH/S cap at 129 MT in recent years despite lower mackerel quotas due to concerns about being able to effectively monitor a very small cap, especially since cap estimates may change substantially as initial observer trips occur and data enters the system. This occurred in early 2023: on April 12, 2023 the RH/S cap was estimated to be 118 MT, while currently the cap is at 106 MT despite additional mackerel landings – additional observer data lowered the ratio that is applied against landings for the cap, and lowered initial cap estimates.

Table 1. Mackerel Fishery’s RH/S Cap Performance

KALL is the total catch, which is combined with the RH/S catch rate to calculate the cap RH/S catch												
Year	Cap	Permit Count	Trip Count	Rounded RH/S Catch Rate ²	RH/S Catch (mt)	Herring (mt)	Mackerel (mt)	KALL (mt)	Rounded Inseason RH/S Catch Rate ³	Observed Trips	CV ⁴	Coverage Percent
2014	236				6							
2015	89	13	55	0.0014	12	3,564	4,591	8,739	0.0016	4	0.2	7%
2016	82	13	55	0.0015	13	5,682	4,336	10,172	0.0015	13	0.7	24%
2017	82	17	71	0.0033	39	6,477	5,780	12,472	0.0033	17	0.4	24%
2018	82	12	57	0.0089	109	4,067	7,927	12,143	0.0101	4	0.3	7%
2019	82	10	31	0.0135	92	2,780	3,724	6,506	C	2	C	C
2020	129	15	93	0.0022	23	2,615	7,404	10,177	0.0022	6	0.6	6%
2021	129	11	42	0.0006	3	1,335	4,816	6,299	0.0000	3	1.2	7%
2022	129	10	17	0.0020	7	1,963	1,177	3,144	0.0020	8	0.4	47%
2023 ¹	129	11	29	0.0202	106	2,543	2,432	5,093	0.0202	5	0.6	17%

Source: GARFO DMIS, CAMS and OBDBS databases as of May 31, 2023. 'C' denotes confidential data.

¹2023 data are preliminary.

²RHS catch rate used to extrapolate RHS catch. Transition rates are used when < 5 observed trips occur within the catch cap year and are highlighted in grey.

³RHS catch rate of observed trips occurring within catch cap year. Rate will be different than RHS CATCH RATE column when transition rates were used.

⁴Coefficient of Variation (CV) of inseason observed trips.

The in-season RH/S cap performance for 2023 through early July is provided in Figure 1 below. It generally aligns with trends in the mackerel fishery (Figure 2 next page), but landings of other species (especially Atlantic herring) on trips landing over 20,000 pounds of mackerel also are used for the cap estimates.

Report Run on: 2023-07-07

Quota Year: 2023 (January 1, 2023 to December 31, 2023)

Catch Cap	Quota (mt)	Cumulative Catch (mt)	Percent Quota Caught
Atlantic Mackerel River Herring/Shad	129	105.9	82%

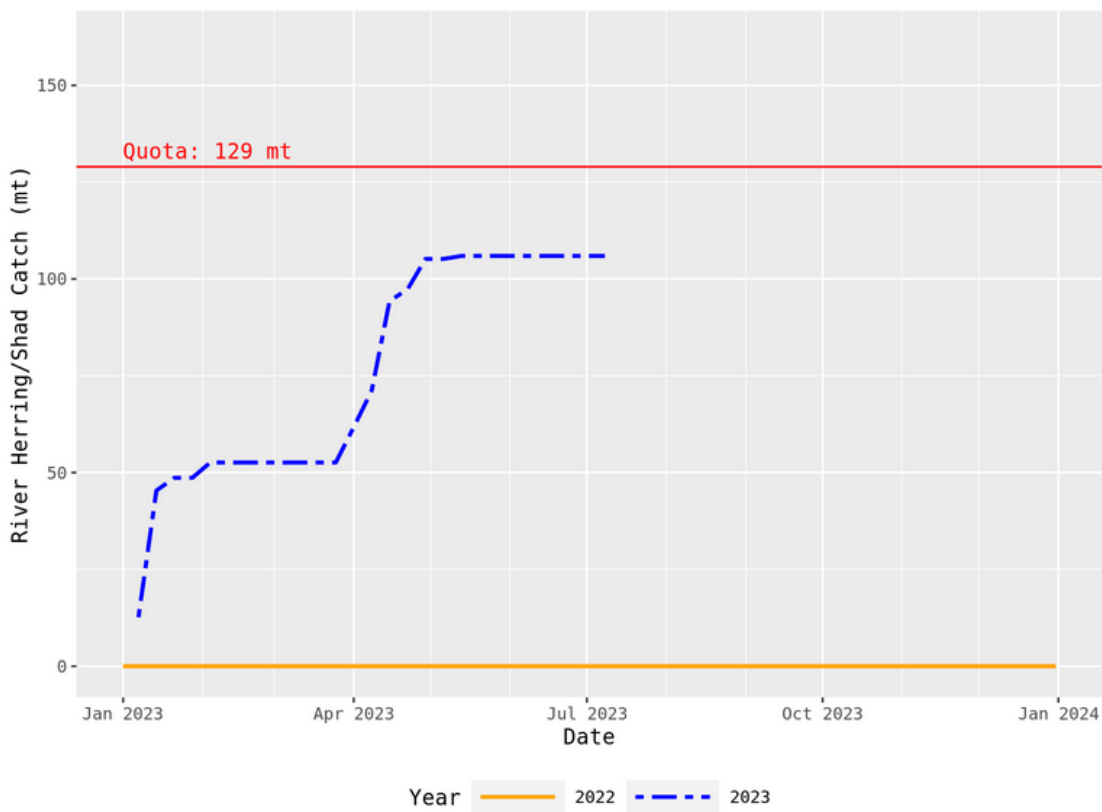


Figure 1. 2023 RH/S Cap Performance as of July 7, 2023

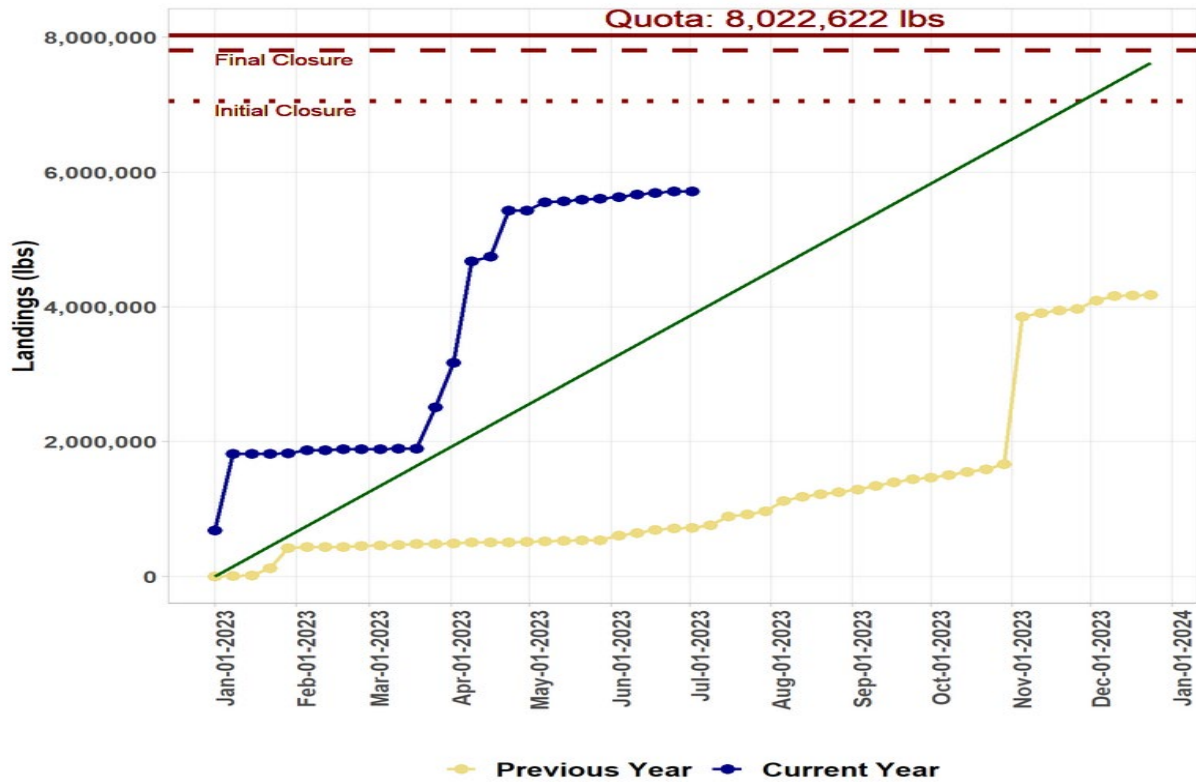


Figure 2. 2023 Atlantic Mackerel Fishery Performance (blue) as of July 6, 2023

As noted in previous updates, due to the overlap in the Atlantic herring and mackerel fisheries, Atlantic herring and Atlantic mackerel RH/S catch cap estimates cannot be summed - this would constitute a misleading double counting. The RH/S on a trip with both Atlantic herring and mackerel can count against both the Atlantic herring and mackerel RH/S caps but because the cap amounts were set considering this circumstance, double counting is not a problem for monitoring. The MSB Monitoring Committee has previously not found any technical/operational issues with the cap, but noted that low observer coverage has the potential to result in imprecise estimates. Portside monitoring, which used to be used as a “double check” on observer rates, has been suspended in recent years due to funding issues.

The Council asked NMFS Greater Atlantic Regional Fisheries Office (GARFO) staff about the recent proportions of RH/S in the mackerel RH/S cap. GARFO staff provided the table below for the inseason observed river herring/shad species proportions used in mackerel RH/S catch cap estimation – the proportions vary substantially year to year.

Table 2. RH/S Species Proportions Used in Mackerel RH/S Cap Estimates

Common Name	2015	2016	2017	2018	2019	2020	2021	2022	2023 ¹
Alewife	5%	39%	38%	18%	C	2%	100%	51%	83%
Blueback herring	1%	61%	60%	82%	C	98%	0%	39%	12%
American shad	94%	0%	2%	0%	C	0%	0%	10%	5%

Source: GARFO DMIS, CAMS and OBDBS databases as of June 2, 2023.

¹2023 data are partial/preliminary. ‘C’ denotes confidential data.

2. Was the RH/S cap based on recent catch or more directly tied to RH/S population dynamics?

To date, the cap has been tied to historical base (2005-2012) RH/S catch rates in the mackerel fishery, and adjusted based on mackerel quotas to both maintain incentives for the mackerel fishery to reduce RH/S catch and facilitate effective monitoring at low mackerel quotas. See #1 above for the calculations used to set the current 2023 RH/S cap for the mackerel fishery.

RH/S population dynamics have not been utilized to set the cap given the lack of accepted reference points. A river herring assessment is underway by the Atlantic States Marine Fisheries Commission that includes a Term of Reference to “If possible, develop methods to calculate a biologically-based cap or limit on bycatch of river herring in ocean fisheries.” A peer review is planned for as early as Nov/Dec 2023 depending on how the assessment progresses.

3. What has recent coastal RH/S catch been? (This analysis was previously based on NMFS observer data expanded based on dealer/VTR data)

Due to challenges with migrating to the new Catch Accounting and Monitoring System (CAMS), the NMFS Northeast Fisheries Science Center (NEFSC) has not yet been able to update the analyses provided in previous years. For data through 2019, please review the 2021 update, available at: <https://www.mafmc.org/s/2021-RHS-Update.pdf>.

For annual specifications, staff creates tables of incidental catches by fishery definitions, which while not aligned to official catch estimates, do provide information on relative catches of various species for the MSB fisheries. The method used is a custom staff analysis, and is best considered as a relative indicator of species that may be affected rather than precise amounts. The *Illex* fishery does not encounter substantial quantities of RH/S, and the butterfish fishery has been operating at relatively low intensity (butterfish analyses may also overlap with longfin squid), but the longfin squid and mackerel fisheries do regularly encounter RH/S. Staff updated relevant analyses with 2021 and 2022 data for longfin (2020 data would be unbalanced toward trips early in the year) and 2019-2022 data for mackerel (most observed trips would occur early in the year anyway in regards to 2020, and there are few observed trips overall):

Longfin Squid: 153 observed longfin squid trips (longfin accounted for at least 40% of retained catch) per year on average 2021-2022 versus the 394 average observed trips over 2017-2019. The longfin squid fishery, considering an average of 14,624 MT of landings, annually (2021-2022) caught about 16,559 pounds of American shad, 11,709 pounds of alewife, 2,427 pounds of hickory shad, 2,022 pounds of blueback herring.

Atlantic Mackerel: 3.5 observed mackerel trips (mackerel accounted for at least 50% of retained catch) per year on average 2019-2022 versus the 7 average observed trips over 2017-2019. 2019 and 2020 were included due to the low numbers of observed trips. The mackerel fishery, considering an average of 5,267 MT of landings, annually (2019-2022) caught about 73,124 pounds of blueback herring, 31,608 pounds of alewife, and 1,418 pounds of American shad.

The ASMFC’s RH/S annual fishery management plan reviews are available at <http://www.asmfc.org/species/shad-river-herring>. Summary landings data from 2012-2021 for river herring and American shad from ME-FL are provided below. The reviews have data on hickory shad but landings are relatively low. Most of these landings are in-river but there may be some incidental catch that is overlapped with the tables above, so the numbers cannot be added. Most of the landings in recent years have been outside of the Mid-Atlantic states.

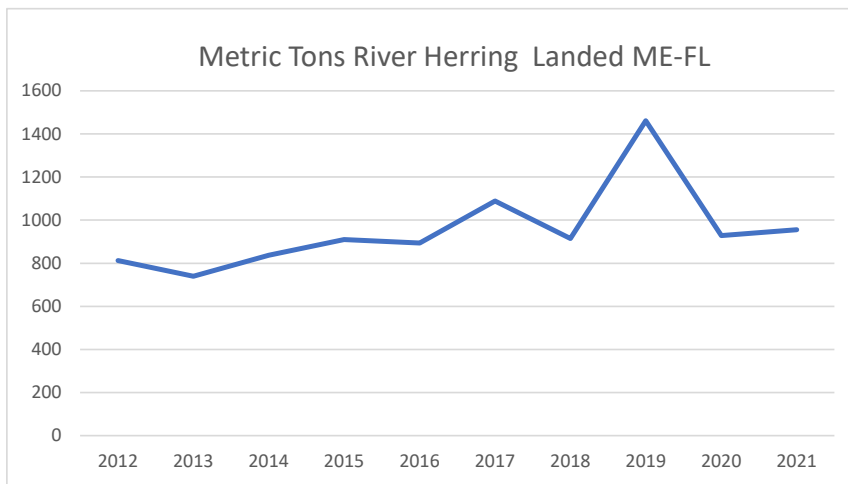


Figure 3. East Coast River Herring Landings

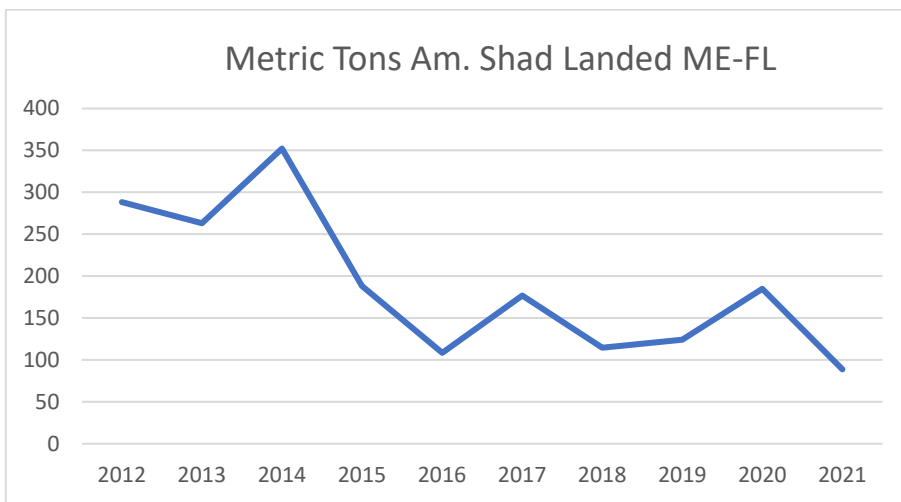


Figure 4. East Coast American Shad Landings

4. What levels of observer coverage have been achieved in relevant fisheries?

Due to CAMS transition issues, the NEFSC was not able to update tables of annual calendar year dealer/VTR trips versus observed trips (Tables 11 (Mid-Atlantic) and 12 (New England) of the previous RH/S update). However, the *Discard Estimation, Precision, and Sample Size Analyses* reports (<https://www.fisheries.noaa.gov/resource/data/annual-discard-reports-northeast>) prepared by the NEFSC provide similar information, albeit for the July-June calendar used for the Standardized Bycatch Reduction Methodology (SBRM).

Table 3. Recent Observer Coverage

Mid-Atlantic	Small Mesh (<5.5 inch)		Large Mesh		Mid Water Trawl	
	VTR	Observed	VTR	Observed	VTR	Observed
July 2018 to June 2019	3833	631	2763	210	18	0
July 2019 to June 2020	NA - Covid					
July 2020 to June 2021	2530	58	3587	46	20	0
July 2021 to June 2022	Expected for August Council Meeting					
New England	Small Mesh		Large Mesh		MWT	
	VTR	Observed	VTR	Observed	VTR	Observed
July 2018 to June 2019	3943	392	4866	440	153	7
July 2019 to June 2020	NA - Covid					
July 2020 to June 2021	3109	83	5082	130	71	3
July 2021 to June 2022	Expected for August Council Meeting					

At Council staff’s request, the NEFSC is also conducting a “what-if analysis” of what would happen to observer coverage if alewife and blueback herring were included as an additional “species group” in the SBRM seaday allocation process. Including river herring as a prioritized species group may increase coverage important for RH/S, but would draw coverage from other fleets. It is anticipated this analysis will facilitate discussion of related tradeoffs. Implementing such a change would require an action by the Council, which per current regulations appears feasible via specifications (50 CFR 648.22(c)(13)), frameworks, or amendments. The Council has not yet received this analysis but expects to include it in materials for the August Council meeting.

5. What progress has been made on aligning cap operation with the Atlantic herring fishery’s cap?

Catches of both Atlantic herring and mackerel are considered in the cap setting and estimation for all the RH/S caps. The Council has previously evaluated the potential to pursue further alignment (for example joint RH/S caps on particular gear types), but decided that given the different policy approaches currently used by each Council, additional alignment would not be the best course of action. Staff notes that [the New England Fishery Management Council may, in 2024, revisit the basis of its catch cap and options for RH/S time/area closures](#). Staff will participate in any related discussions and keep the Council informed of related developments.

6. What other RH/S coordination with other management partners has occurred (NMFS, NEFMC, ASMFC, states, NGOs, academia, River Herring Forum (formally called the TEWG), etc.)?

Council and ASMFC staffs are in regular contact to ensure that each entity remains apprised of current developments, including participation in NOAA's Atlantic Coast River Herring Collaborative Forum (formally called the TEWG -Technical Expert Working Group). See <https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/atlantic-coast-river-herring-collaborative-forum> for details on the Forum including recent and upcoming meetings. The Council has also entered into a contract for mid-2023 and 2024 with Manomet to build out a portal for centralizing information on river herring runs – besides some runs considered during infrequent assessments, it can be difficult to ascertain trends in river herring runs and the portal would allow much easier sharing of run information. Manomet had been building a portal for Maine runs (<https://www.gomriverherringnetwork.org/>) and we will build off those efforts. See also discussions below regarding two recent journal publications regarding RH/S bycatch.

7. How has the Scientific and Statistical Committee (SSC) been involved?

The SSC has not been substantially involved over the last two years, but the SSC has previously expressed willingness to review any potential options for biologically-based caps or other relevant work.

8. What other actions have been taken by the Council that could affect RH/S?

The relatively low mackerel quotas implemented for mackerel rebuilding should keep effort for mackerel relatively low. Under 2023 specifications, directed mackerel commercial fishing is curtailed when landings reach 3,196 MT, which is about one fifth of average U.S. commercial landings from 1997-2022.

9. What other information is available on RH/S abundance trends?

The text below is from the ASMFC's website: <http://www.asmfc.org/species/shad-river-herring>:

American Shad

The 2020 American shad benchmark stock assessment is the most recent assessment for the American shad stock. Similar to the results of the 2007 assessment, the 2020 assessment found coastwide populations to be depleted. Multiple factors, such as overfishing, inadequate fish passage at dams, predation, pollution, water withdrawals, channelization of rivers, changing ocean conditions, and climate change are likely responsible for the decline from historic shad abundance levels. Additionally, the assessment found that shad recovery is limited by restricted access to spawning habitat, with 40% of historic habitat in the U.S. and Canada currently blocked by dams and other barriers. This may equate to a loss of more than a third of spawning adults.

The abundance status of American shad relative to historic levels is unknown for most systems, but was determined to be depleted in the Potomac and Hudson, and not depleted for the Albemarle Sound. Coastwide adult mortality is also largely unknown and juvenile mortality status cannot be determined due to insufficient data collection. The “depleted” determination was used instead of “overfished” because the impact of fishing on American shad stocks cannot be separated from the impacts of all other factors responsible for changes in abundance. The recovery of American shad will need to address multiple threats to shad including anthropogenic (human-caused) habitat alterations, predation by non-native predators, and exploitation by fisheries.

River Herring

The 2017 stock assessment update indicated that river herring remain depleted at near historic lows on a coastwide basis. Total mortality estimates over the final three years of the data time series (2013-2015) were generally high and exceeded region-specific reference points for some rivers. However, there were some positive signs of improvement for some river systems. Total mortality estimates for 2 rivers have fallen below region-specific reference points during the final three years of the data time series, compared to the zero estimates that were below reference points at the end of the 2012 stock assessment data time series. Of the 54 stocks for which data were available, 16 experienced increasing abundance, 2 experienced decreasing abundance, 8 experienced stable abundance and 10 experienced no discernable trend in abundance over the final 10 years of the time series (2006-2015). A benchmark stock assessment is underway by the ASMFC, and should be reviewed in either late 2023 or 2024.

Several indices that the NEFSC, states, or other entities provided are included in Appendix 1, updated with responses based on requests from Council staff.

10. Other Information

Two recent publications seem to have the potential to inform future RH/S management:

10A) Kerry Reid, Jennifer A. Hoey, Benjamin I. Gahagan, Bradley P. Schondelmeier, Daniel J. Hasselman, Alison A. Bowden, Michael P. Armstrong, John Carlos Garza, and Eric P. Palkovacs. 2022. Spatial and temporal genetic stock composition of river herring bycatch in southern New England Atlantic herring and mackerel fisheries. *Canadian Journal of Fisheries and Aquatic Sciences*. 80(2): 360-374. Full text: <https://cdnsciencepub.com/doi/full/10.1139/cjfas-2022-0144>

Abstract: Anadromous river herring (alewife and blueback herring) persist at historically low abundances and are caught as bycatch in commercial fisheries, potentially preventing recovery despite conservation efforts. We used newly established single-nucleotide polymorphism genetic baselines for alewife and blueback herring to define fine-scale reporting groups for each species. We then determined the occurrence of fish from these reporting groups in bycatch samples from a Northwest Atlantic fishery over four years. Within sampled bycatch events, the highest proportions of alewife were from the Block Island (34%) and Long Island Sound (22%) reporting groups, while for blueback herring the highest proportions were from the Mid-Atlantic (47%) and Northern New England (24%) reporting groups. We then quantified stock-specific mortality in a focal geographic area (~3500 km², including Block Island Sound) of high bycatch incidence and sampling effort,

where the most accurate estimates of mortality could be made. During this period, we estimate that bycatch took about 4.6 million alewife and 1.2 million blueback herring, highlighting the need to reduce bycatch mortality for the most depleted river herring stocks.

Staff note: This study's estimate was about 1.5 million river herrings per year 2012-2015 in the focal area of study. MSB Amendment 14 estimated that about 5 million river herrings were caught total per year 2006-2010 in ocean intercept fisheries (based on 5 fish per pound), and previous updates found that total river herring catches in 2012-2015 (this study's time period) were about half of 2006-2010 (from Amendment 14). So this study's estimates generally align with previous MSB Amendment and RH/S Update findings.

10B) K.E. Roberts, J.E.F. Stepanuk, H. Kim, L.H. Thorne, C. Chong-Montenegro, J.A. Nye. Developing a subseasonal ecological forecast to reduce fisheries bycatch in the Northeast U.S., *Progress in Oceanography*, Volume 213, 2023, 103021, ISSN 0079-6611, <https://doi.org/10.1016/j.pocean.2023.103021>, <https://www.sciencedirect.com/science/article/pii/S0079661123000642>)

Abstract: Over the past decade, substantial progress has been made in projecting and predicting the spatial distribution of many marine species at seasonal to multidecadal time scales. However, managers and fishers often need to make decisions at much shorter time scales. Subseasonal environmental forecasts, which generate predictions over one to several weeks, can now be combined with species-specific habitat preference data to create ecological forecasts that could facilitate dynamic spatial management. The development of such predictive tools could aid in identifying optimal times and areas for fishers to maximize target catch and avoid nontarget catch. Nontarget catch, or bycatch, can have numerous and potentially severe economic and ecological consequences. Here, we focus on a population of anadromous fish known collectively as river herring (alewife and blueback herring), as they are species of concern and are heavily impacted by bycatch. Using bottom trawl survey data from the Northeast US and subseasonal forecasts of sea surface temperature, we constructed a bycatch risk model to generate probabilistic predictions of river herring distributions in regions frequented by the US mid-water trawl fishery. Assessments of model skill showed that our ecological model performed well in predicting the distribution of river herring and that subseasonal forecasts were effective at 1-week timeframes. There was a clear seasonal effect on forecasted bycatch risk throughout the Northeast US, with particularly high risk in winter and spring months. Importantly, variability in risk was detectable at the weekly timescale and our model identified specific areas and times that fishers should avoid in order to decrease their likelihood of bycatch. The bycatch risk forecast developed in this study is a significant advance from near-real time forecasts and the foundation to build forecast systems by combining species co-occurrence models with subseasonal forecasts. As these subseasonal forecasts are available globally, this approach could be adapted to facilitate the management of other natural resource conflicts around the world.

Staff note: This model showed skill in using subseasonal forecasts of sea surface temperature to predict where the bottom trawl survey would catch river herrings. Staff has had preliminary discussions with one of the authors whether the model could be tested to see what proportion of

bycatch events occurred within the areas of highest modeled risk, or if there are other analyses that could facilitate evaluations of the potential for operationalization of the model.

11. Staff Recommendation for Next Steps

Developing bycatch caps that are more than general deterrents and are meaningfully tied to the biology and status of the identified regional RH/S population structure seems less and less likely given the work on genetic composition of bycatch in recent years. Even if one was able to determine an amount of coastwide biologically acceptable bycatch, the probability seems remote of knowing in real time whether the distribution of annual impacts on the regional populations can be well tolerated by those populations. The RH/S caps have created some incentive to avoid RH/S and have reduced RH/S bycatch because there have been closures for both mackerel and herring due to the RH/S caps. However the risk modeling discussed in 10B above, and identification of times and areas to avoid, seem to hold more promise at the current time.



Electronic Monitoring and Reporting Program

Fisheries electronic data collection funding opportunity

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Anglers at Montauk Point, New York

OVERVIEW

The Electronic Monitoring and Reporting grant program (EMR) is a competitive funding opportunity established by the National Fish and Wildlife Foundation (NFWF) in 2015 with support from the National Oceanic and Atmospheric Administration (NOAA). The grant program funds projects that are 1) driving the incorporation of electronic technologies in fisheries data collection and 2) modernizing fisheries data management for better decision making. EMR seeks both projects that explore and pilot new technology ideas, as well as projects that implement proven fisheries technology innovations at the fishing fleet scale or across multiple fishing communities.

Since 2015, EMR has awarded more than \$1.2 million to 7 projects in Mid-Atlantic fisheries, with conservation impact doubled through \$1.3 million in matching funds. Even more funding was provided prior to 2015 through NFWF's Fisheries Innovation Fund. EMR projects have supported a variety of innovations for Mid-Atlantic fishing communities and partners including electronic reporting in for-hire, recreational and commercial fisheries. NFWF aims to continue supporting high priority work on in the Mid-Atlantic but can only fund what we receive proposals on.

The next application window will begin in August 2023. Priorities are based on NOAA's Electronic Technologies Regional Implementation Plans, among other sources. Priorities include scaling and improving electronic monitoring and reporting data collection and enhancing our ability to efficiently process and use this data. Work in any US State or Federal fishery is eligible. The most competitive proposals will show close coordination and engagement with fishermen and often relevant agencies. Learn more and see more information on program priorities at: <https://www.nfwf.org/programs/fisheries-innovation-fund>

Electronic technologies have the potential to bring down the cost of fishery monitoring; increase the speed, reliability and transparency of fisheries data; and enable managers and fishermen to address management challenges more effectively. High quality, timely and accurate fisheries information is critical to maintaining sustainable U.S. fisheries.



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 27, 2023
To: Council
From: Jason Didden
Subject: 2024-2026 Longfin Squid Specifications

The Mackerel, Squid, and Butterfish Monitoring Committee met via webinar on July 27, 2023 to review longfin squid specifications and make recommendations based on the Scientific and Statistical Committee's (SSC) status-quo 23,400 metric ton (MT) Acceptable Biological Catch (ABC) for longfin squid. The Monitoring Committee's Atlantic mackerel discussions are summarized in the Atlantic mackerel briefing materials tab.

Members of the Monitoring Committee on the call included Jason Didden, Carly Bari, Lisa Hendrickson, Kiersten Curti, and Daniel Hocking. Other attendees included Alissa Wilson, Brad Schondelmeier, Gerry O' Neill, James Boyle, Katie Almeida, Maria Fenton, Meghan Lapp, Melissa Smith, Renee Zobel, "dj," and "Todd."

The only change from status-quo longfin squid specifications recommended by the Monitoring Committee is to update the discard set aside to be 506.3 metric tons based on the average of the annual discard percent of catch from 2007-2022 (since trimester-based management). Currently 468 MT are set-aside for discards. This set-aside would be consistent with past practices and, based on recent discard estimates, should set enough catch aside to avoid ABC overages. The Monitoring Committee noted that in the future, additional exploration of discard details (why/when/where?) may be useful. The Monitoring Committee also briefly discussed the recent scup discard report given future related actions may impact the squid fishery.

The resulting specifications would be for the longfin squid ABC to be 23,400 MT, and for the Initial Optimum Yield (IOY)/Domestic Annual Harvest (DAH)/ Domestic Annual Processing (DAP) to be 22,893.7 MT.

Additional supporting materials in this tab include the staff ABC memo to the SSC, the Advisory Panel Fishery Performance Report, and the staff Fishery Information Document. The summary of the SSC meeting relating to longfin squid is in the Committee Reports tab.



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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 14, 2023
To: Chris Moore, Executive Director
From: Jason Didden, staff
Subject: Status quo recommended for 2024-2026 Longfin Squid ABCs

Current Measures and Review of Prior SSC Recommendations

The primary measures used in the longfin squid fishery to control catch include a discard set-aside, limited access (tiered), and weekly monitoring that is coupled to closure triggers and post-closure trip limits.

The current Acceptable Biological Catch (ABC) of 23,400 metric tons (MT) is based on catch in the year of the highest exploitation ratio (1993) from the 2010 assessment. That year is still the highest ratio, but catch in 1993 is now estimated to have been 23,950 MT (due to revised discards). The SSC concluded a 23,400 MT annual catch appears to be sustainable based on empirical evidence. They have noted that considering exploitation on a seasonal basis (rather than annual) may call into question whether stock exploitation has been persistently low.

Recent Catch and Landings

Recent landings have been typically variable but 2022 landings were higher than any since 1999. Discards are consistently a very small component of catch.

Stock Status and Biological Reference Points

There is no overfishing reference point. Biomass has never declined below the overfished threshold. While the meaningfulness of the stocks reference point may be questioned, there appears to be no long-term trend in annualized biomass and the terminal year's (2022) biomass was relatively high.

Staff Recommendation

Staff recommends the current ABC of 23,400 MT be maintained until there is an assessment to justify a change. Staff also notes that the sources cited in regard to “two” cohorts (Brodziak and Macy, 1996; Macy and Brodziak, 2001) suggest several assessments may be needed throughout the year to capture the large number of possible micro-cohorts resulting from continuous spawning. Additional information on fishery performance and management measures can be found in the 2023 Fishery Information Document and the 2023 Fishery Performance Report developed by the Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP).



Longfin Squid Fishery Performance Report July 2023

The Mid-Atlantic Fishery Management Council's (Council) Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP) met via webinar to review the Longfin Squid and Atlantic Mackerel Fishery Information Documents and develop Fishery Performance Reports. Separate reports were created for each species/fishery. The primary purpose of the report is to contextualize catch histories for the Scientific and Statistical Committee (SSC) by providing information about fishing effort, market trends, environmental changes, and other factors. AP member comments are not consensus or majority statements – the summary below may represent the perspective of one or multiple AP members. Some staff follow-up information has been added and noted where applicable.

Advisory Panel members present: Dan Farnham Jr, Eleanor Bochenek, Emerson Hasbrouck, Greg DiDomenico, Jeff Kaelin, Katie Almeida, Meghan Lapp, Pam Lyons Gromen, Peter Kaizer, and Robert Ruhle

Others present: Jason Didden, Peter Hughes, Mark Holliday, Alissa Wilson, BB, Brad Schondelmeier, Carly Bari, Hannah Hart, Jessica Blaylock, Maria Fenton, and Mark Binsted.

Trigger questions posed to the AP to generate discussion:

1. What factors have influenced recent catch (markets, environment, regulations, etc.)?
2. Are the current fishery regulations appropriate? How could they be improved?
3. What would you recommend as research priorities?
4. What else is important for the Council to know?

Market/Economic Conditions

High production early in 2022 meant processors had substantial product stocked. There were some sluggish sales in 2022, higher inventory, and still some COVID-19 hangover, resulting in lower prices. Lower prices/demand and quality issues impacted the ability of some smaller boats to move product.

Some smaller boats were less active in early summer 2023 versus the early summer of 2022.

There are two markets – fresh and frozen. It's expensive to hold frozen product and expensive to ship, affecting price that processors can offer to vessels. Diesel prices were very high in 2022, affecting costs for both vessels and processors.

In response to discussion, advisors noted that squid size can impact price depending on markets and demand, but this discussion was not centered around key factors affecting 2022/2023 production.

Environmental Conditions

Nothing remarkable was reported, but discussion noted that the “Squid Squad” is investigating connections between squids and environmental conditions (the initial focus was just *Illex*). The Squid Squad meets regularly and integrates industry observations and environmental analyses from participating scientists at NMFS’ Northeast Fisheries Science Center. See related materials at <https://www.mafmc.org/briefing/february-2023> for additional information on the Squid Squad and related research.

Management Issues

Area/gear limitations negatively affect fishing/landings. Scup, Tilefish, and Fixed/Mobile Gear Restricted Areas (GRAs) have made longfin squid fishing more difficult. Large mesh requirements on George’s Bank also restrict targeting of longfin squid in areas where fishermen have been seeing signs of longfin squid in recent years. The [Northeast Canyons and Seamounts Marine Monument](#) may negatively impact access to areas where longfin squid could have been caught. The Monument also acts as a fence because you’d have to spend the time and fuel to get to the other (eastern) side.

Windfarm development continues to be a major concern for the longfin squid fishery given expanding potential overlap between wind farm areas and squid fishery areas. Concerns involve both fleet displacement and effects on squid mortality/behavior from installation and/or operation of turbines/facilities.

There was a question and discussion regarding why the minimum mesh requirement is only 1 7/8 inches in Trimester 2 (May-August) versus 2 1/8 inches the rest of the year and a recommendation to make the 2 1/8 inch requirement effective year-round. As follow-up, staff reviewed the history behind the mesh requirement, and before Amendment 10 implementation (2010), the year-round requirement was 1 7/8 inches. A year-round 2 1/8 inch requirement was considered but public comments indicated that due to summer spawning of longfin squid, the economic losses due to larger mesh sizes would be highest in Trimester 2 so the increase to 2 1/8 inches was limited to Trimesters 1 and 3. Amendment 10 noted “Given the lack of selectivity information for *Loligo*, the Council concluded the only way to determine practicability was to proceed with a modest mesh size increase and then evaluate the impacts of the mesh increase after it has been in effect for two years. The results of the practicability assessment would be used for subsequent decisions to lower, maintain, or raise the minimum codend mesh size requirement for the *Loligo* fishery.” Staff noted an ongoing concern has been that if catch per unit of effort is lowered through mesh size increases, and effort increases in response, mesh measures with good intent have the potential to worsen discards. Discussion noted that Vessel Trip Reports (VTRs) could be examined to determine if vessels are still using mesh less than 2 1/8 inches during Trimester 2. Staff notes that an evaluation of the effectiveness of current mesh regulations is part of the Council’s current research priorities for longfin squid.

Bycatch information is useful to have in the Fishery Information Document. Discards in the longfin squid fishery remain high despite a Council research priority to address discards and warrant additional attention. Monitoring trends in bycatch could be important given climate impacts on bycaught non-target species of concern and their distributions. Staff notes that a

variety of bycatch-reduction approaches have been researched over the years partly in response to Council research priorities. To the best of staff's knowledge, these efforts have not yet found an effective and practicable solution (e.g. Bayse et al 2017: <https://onlinelibrary.wiley.com/doi/abs/10.1111/jai.13381>).

The Marine Stewardship Council has reviewed bycatch information for longfin squid and potential bycatch species of concern and certified the longfin squid fishery as sustainable (<https://fisheries.msc.org/en/fisheries/u.s.-northeastern-coast-longfin-inshore-squid-and-northern-shortfin-squid-bottom-trawl-fishery>). Discards in the longfin squid fishery have been reviewed numerous times and been reduced to the extent practicable. For butterfish, higher catches are likely just a reflection of the robust butterfish stock. Management should not hold the longfin squid fishery to a higher standard that is not considered for other fisheries/sectors.

There was discussion regarding the reason for most butterfish discards – as follow-up staff found that for the subset of trips analyzed, most butterfish discards (88%) had “no market” indicated for the discard reason (either size or unspecified market considerations). There was also discussion of whether discarding patterns have generally shifted over time, but such analyses would require a separate investigation to ensure findings were representative of the fishery.

Other Issues

The main consideration should be that the assessment indicates the stock is lightly fished.

Fishermen are seeing scallopers that have jumped into longfin fishing and groundfish sector boats that are rigging up for longfin – activation of latent effort is still a concern, but seems unlikely that the Agency would approve of latent permit reductions in longfin squid given recent rejection of similar measures for *Illex*.

Especially until we have completed the upcoming research track assessment, it's unnecessary to investigate every potential criticism of squid management (including the potential for managing based on sub-annual cohorts).

Research Priorities

The assessment should consider escapement-type approaches accounting for the footprint of the stock and fishery. Cohort-based analyses were found to be not practicable in the *Illex* assessment. It needs to be more clearly described how the existing evidence supports two primary cohorts (which happen to align with the surveys).

Dynamic natural mortality among cohorts should be investigated in the research track assessment.

Investigate NEFSC survey catchability for longfin.

Additional Public Input

No additional input was provided.



Longfin Squid (*Doryteuthis pealeii*) Fishery Information Document

July 2023

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for longfin squid (“longfin” hereafter, formerly known as “*Loligo*”), with an emphasis on 2022. Data sources for Fishery Information Documents include unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and should be considered preliminary. For more resources, including previous Fishery Information Documents, please visit <http://www.mafmc.org/msb>.

Key Facts

- Landings have been typically variable and well below the annual quota in recent years. Considerable variability is expected in abundance, availability, and landings for any squid fishery.
- A management track assessment for Longfin was conducted in 2023. Based on 2022 data the stock was not overfished. The two-year average of the combined spring and fall NEFSC surveys showed continued variability, ending relatively high in 2022. Overfishing reference points are not available. A research track assessment will begin soon for review in early 2026.
- 2022 longfin landings and revenues increased substantially compared to 2021, and 2022 revenues set a new record for the fishery, slightly eclipsing 2016.
- Average annual prices in 2021 and 2022 were very similar, but prices fell considerably at the end of 2022. Average annual prices are still below pre-Covid levels.
- 2023 landings to date have been lower than 2022. Trimester 1 2023 landings were less than half of trimester 1 2022’s landings, but as of early July, trimester 2 of 2023 was on a path to catch its quota.
- Similar to previous analyses, about 1/3 of catch on observed longfin trips is discarded. Butterfish, scup, sea robin, *Illex*, longfin, little skate, and spotted hake represented 67% of the discards based on raw observer data.

Basic Biology

Longfin is a neritic (from the shore to the edge of the continental shelf), semi-pelagic schooling cephalopod species primarily distributed between Georges Bank and Cape Hatteras, NC. The squid, and the fishery, generally occur offshore in the winter and inshore during the summer, with mixing and migrations from one to the other in spring and fall. Spawning/ recruitment occurs year-round with seasonal peaks in cohorts. The average lifespan of a cohort is about six

months. Individuals hatched inshore during the summer are taken in the winter offshore fishery and those hatched in the winter are taken in the inshore summer fishery. Age data indicate that NEFSC spring surveys (March-April) capture longfin that were hatched during the previous six months, in the fall, and those caught in the NEFSC fall surveys (September-October) were hatched during the previous spring. Longfin attach egg masses to the bottom substrate and fixed objects. Fishing and spawning mortality occur concurrently inshore during late spring through fall. The locations of spawning sites offshore at other times of the year are not well understood. Additional life history information is detailed in the Essential Fish Habitat (EFH) document for the species, located at: <http://www.nefsc.noaa.gov/nefsc/habitat/efh/>.

Status of the Stock

Based on the 2023 management track assessment, longfin was not overfished in 2022 but there are no overfishing reference points available (available at https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php). See Figure 1 for trends in biomass and catch from the last assessment through 2022. If considered separately, the cohorts represented by the spring and fall surveys would have been well-above their potential individual proxy biomass thresholds in 2022.

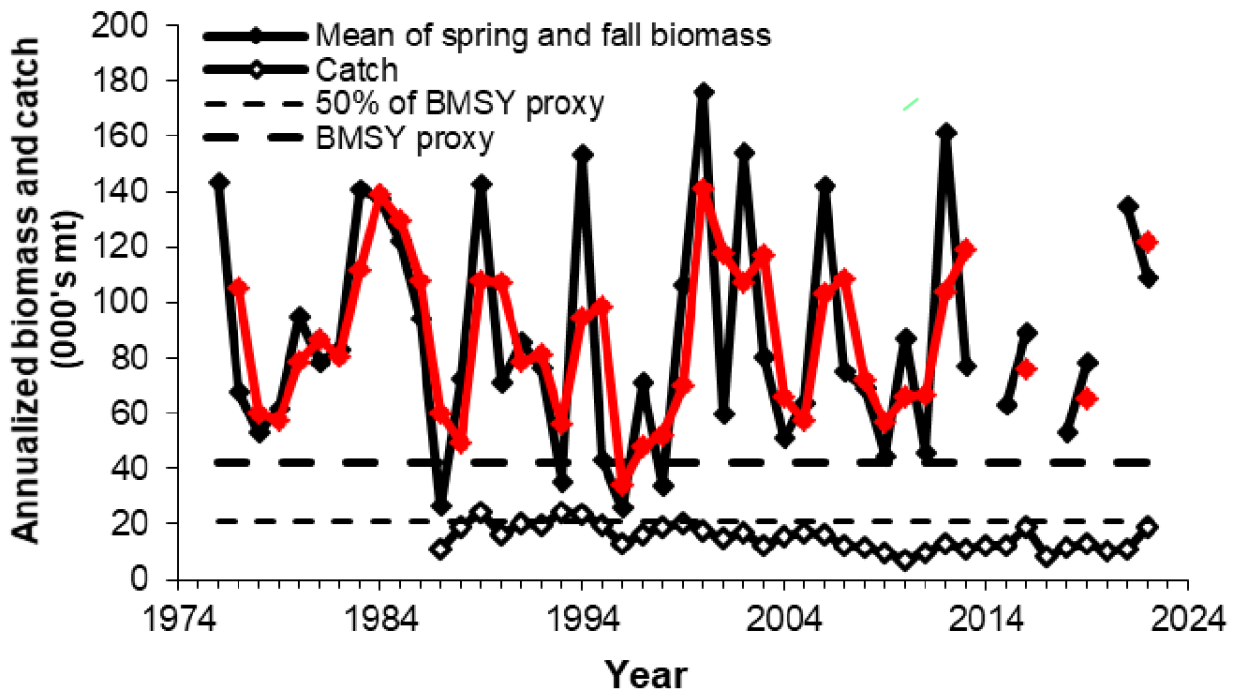


Figure 1. Longfin annualized biomass estimates (averages of the NEFSC spring and fall survey biomasses, in MT), in relation to the biomass target (42,205 MT) and biomass threshold (50% of target), and annual catches. The red line represents the two-year moving average of the annualized biomass estimates. Biomass estimates are q-adjusted swept area estimates.

Management System and Fishery Performance

Management

The Council established management of longfin in 1978 and the management unit includes all federal East Coast waters.

Access is limited with several moratorium permit categories. The quota is divided into three, 4-month trimesters (T) - 43% (T1 Jan-Apr), 17% (T2 May-Aug), and 40% (T3 Sept-Dec). Unused quota can roll over into later trimesters within a year depending on the amount of longfin landed. Underages from T1 that are greater than 25% are reallocated to trimesters 2 and 3 (split equally between both trimesters) of the same year. However, the T2 quota may only be increased 50% above its base and the remaining portion of the underage is reallocated to T3. Any underages for T1 that are less than 25% of the T1 quota are applied only to T3 of the same year. Any overages for T1 and T2 are subtracted from T3 of the same year as needed.

The 2023 longfin ABC is 23,400 MT, with a commercial quota of 22,932 MT (reduced to account for discards). Weekly monitoring, closure triggers, and trip limits are used to avoid substantial overages (measures modified occasionally based on performance).

Recreational catch of longfin is believed to be negligible relative to commercial catch. There are no recreational regulations except for party/charter vessel permits and VTR reporting. MRIP does not collect information on invertebrates, but social media indicates recreational fishing (private and for-hire) for longfin occurs.

Commercial Fishery

Figure 2 describes longfin landings 1963-2022. Figures 3-4 include domestic landings, ex-vessel revenues (2022 dollars¹), and prices (2022 dollars) since 1996. Figure 5 highlights the drop in longfin prices at the end of 2022. Figure 6 illustrates preliminary landings throughout the year for 2022 and 2021 and Figures 7/8 illustrate preliminary landings for trimesters 1/2 for 2023 and 2022.

Table 1 describes 2022 longfin landings by state and table 2 describes 2021 and 2022 longfin landings by NMFS Statistical Areas. Almost all landings that have gear identified are bottom trawl.

¹ Unless noted otherwise, revenues/prices are provided as inflation-adjusted “2022 dollars” via the Gross Domestic Product Implicit Price Deflator.

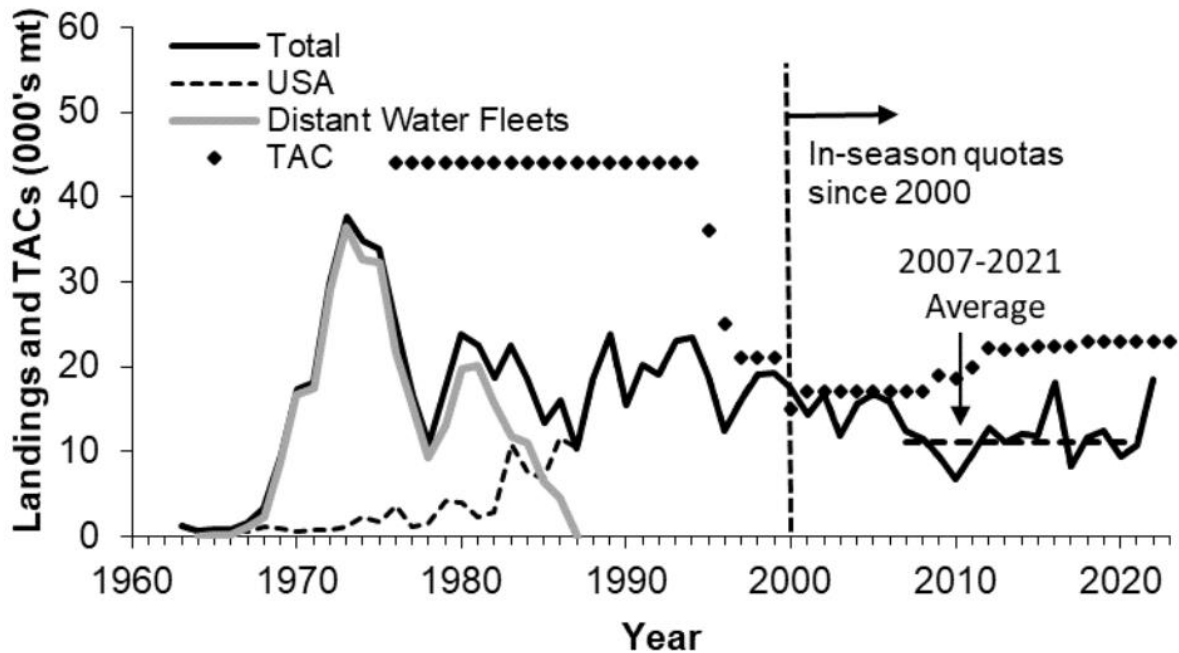


Figure 2. Landings of longfin, by USA and international fleets, on the Northeast USA continental shelf during 1963-2022 and annual TACs during 1974-2022. In-season quotas were quarterly-based during 2001-2006 and trimester-based during 2000 and 2007-current.

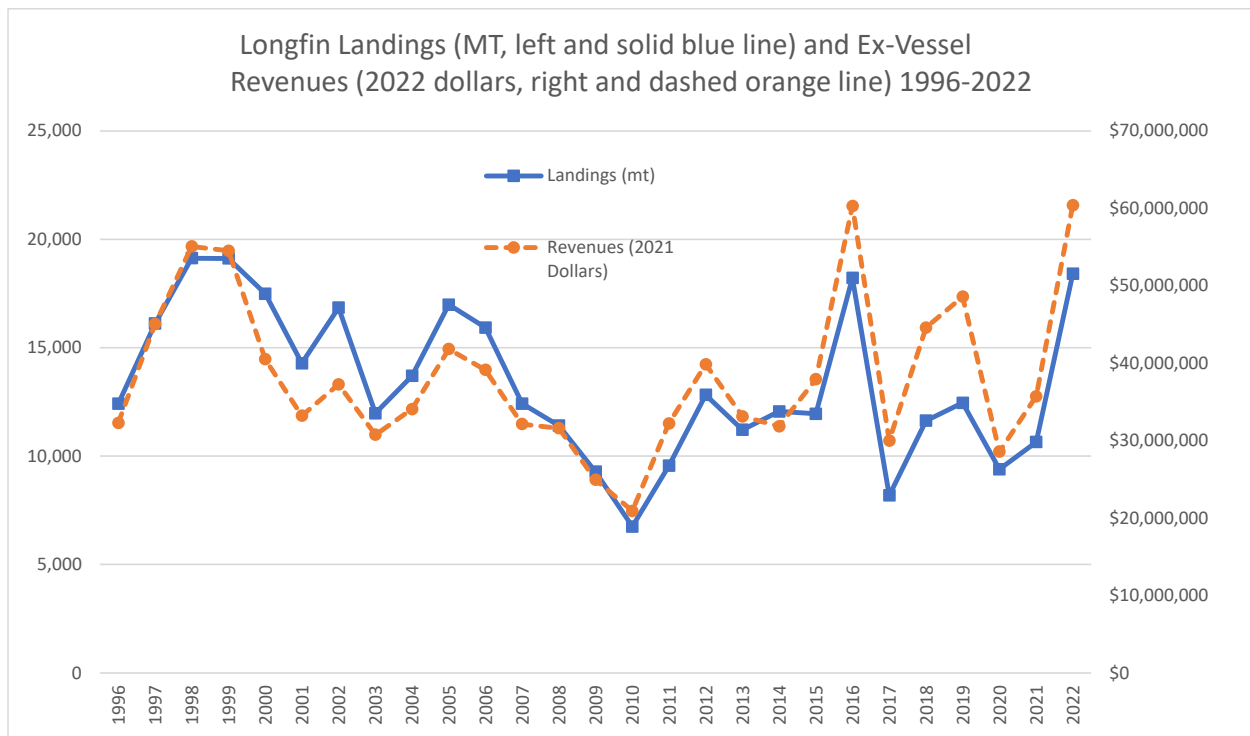


Figure 3. U.S. Longfin Landings and Longfin Ex-Vessel Values 1996-2022. Source: NMFS unpublished dealer data.

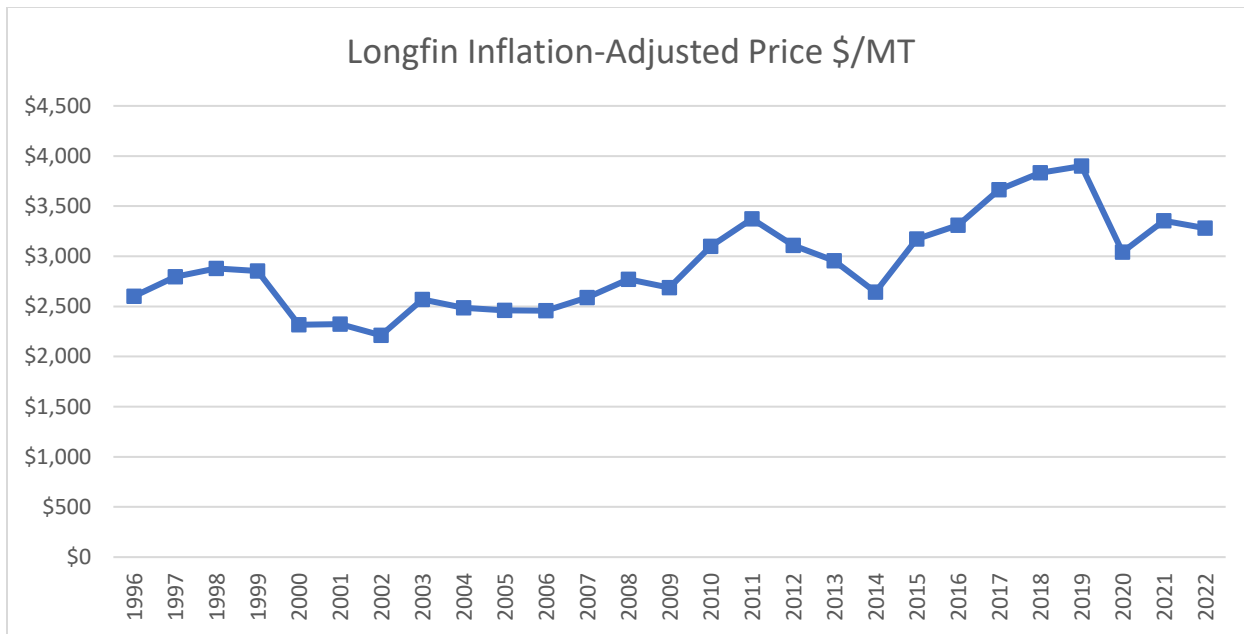


Figure 4. Annual Ex-Vessel Longfin Prices 1996-2022 Adjusted to 2022 Dollars Source: NMFS unpublished dealer data.

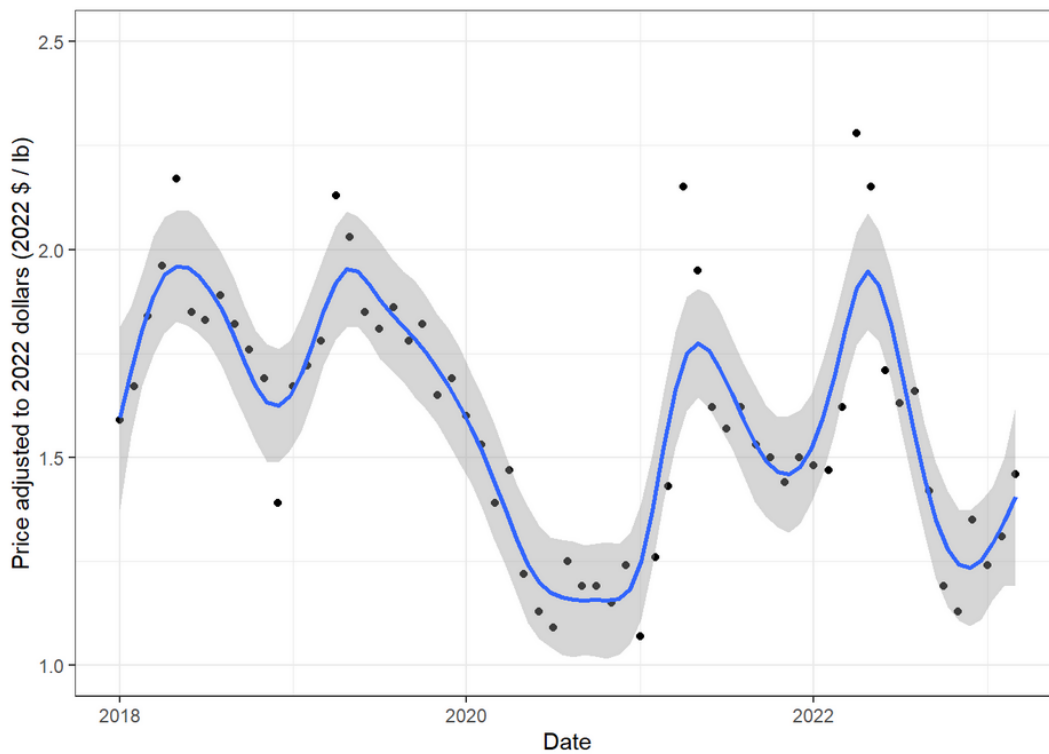


Figure 5. Recent monthly Ex-Vessel Longfin Prices through March 2023 (dots are monthly average prices with trend-smoother illustrated). Source: NMFS unpublished dealer data.

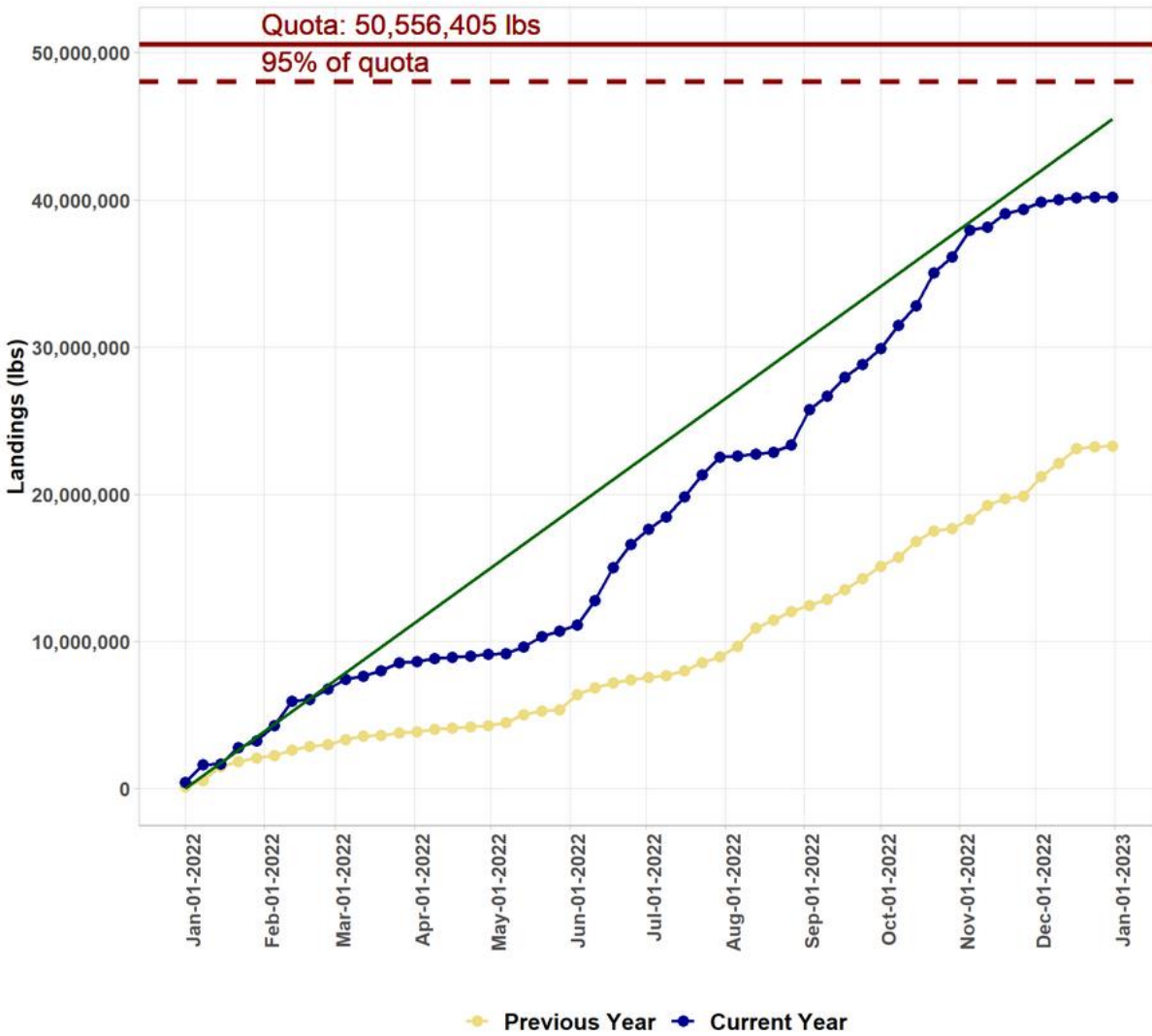


Figure 6. U.S. Preliminary Weekly Longfin landings; 2022 in blue, 2021 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

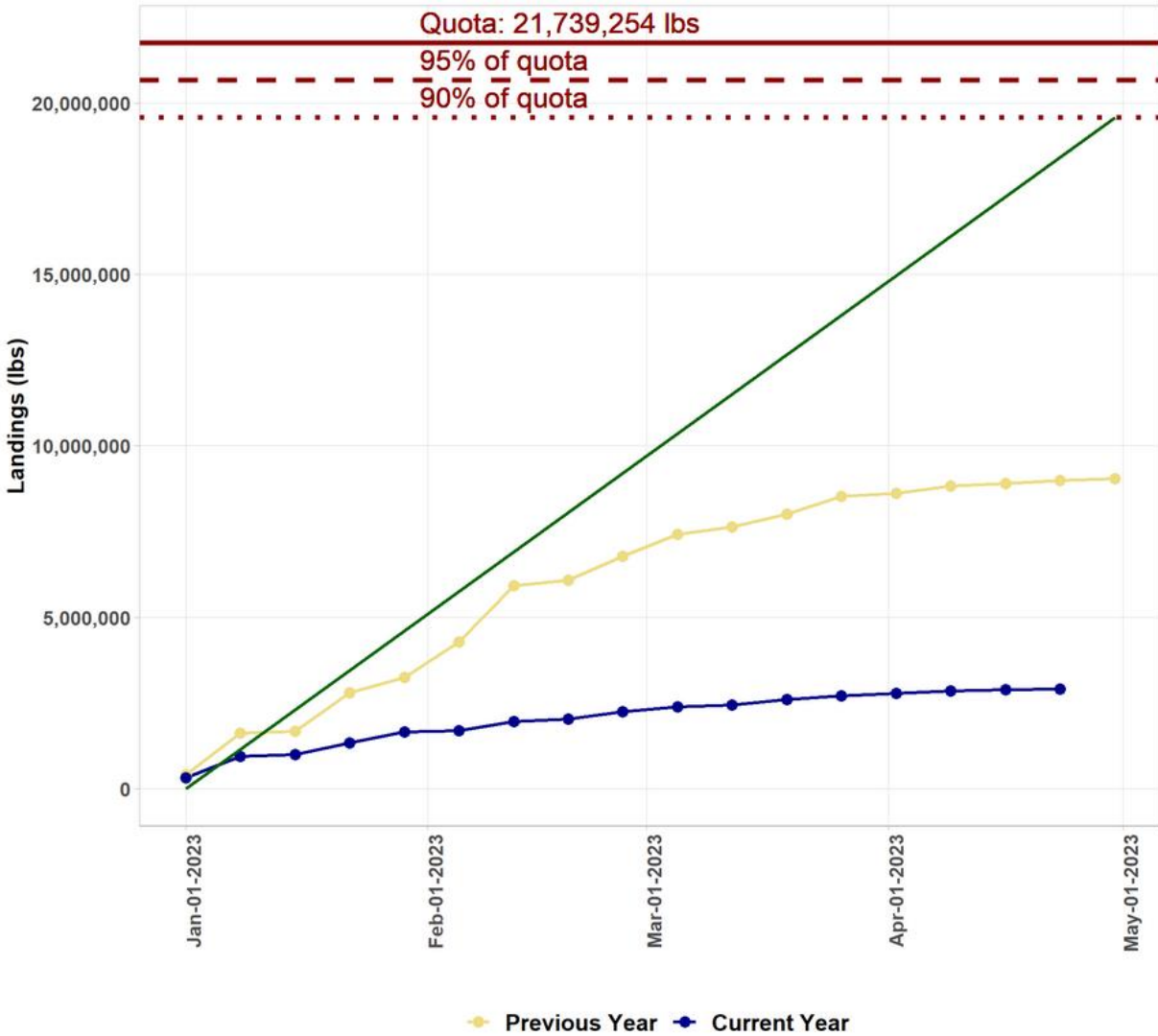


Figure 7. U.S. Preliminary Weekly Trimester 1 Longfin landings; 2023 Trimester 1 in blue, 2022 Trimester 1 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

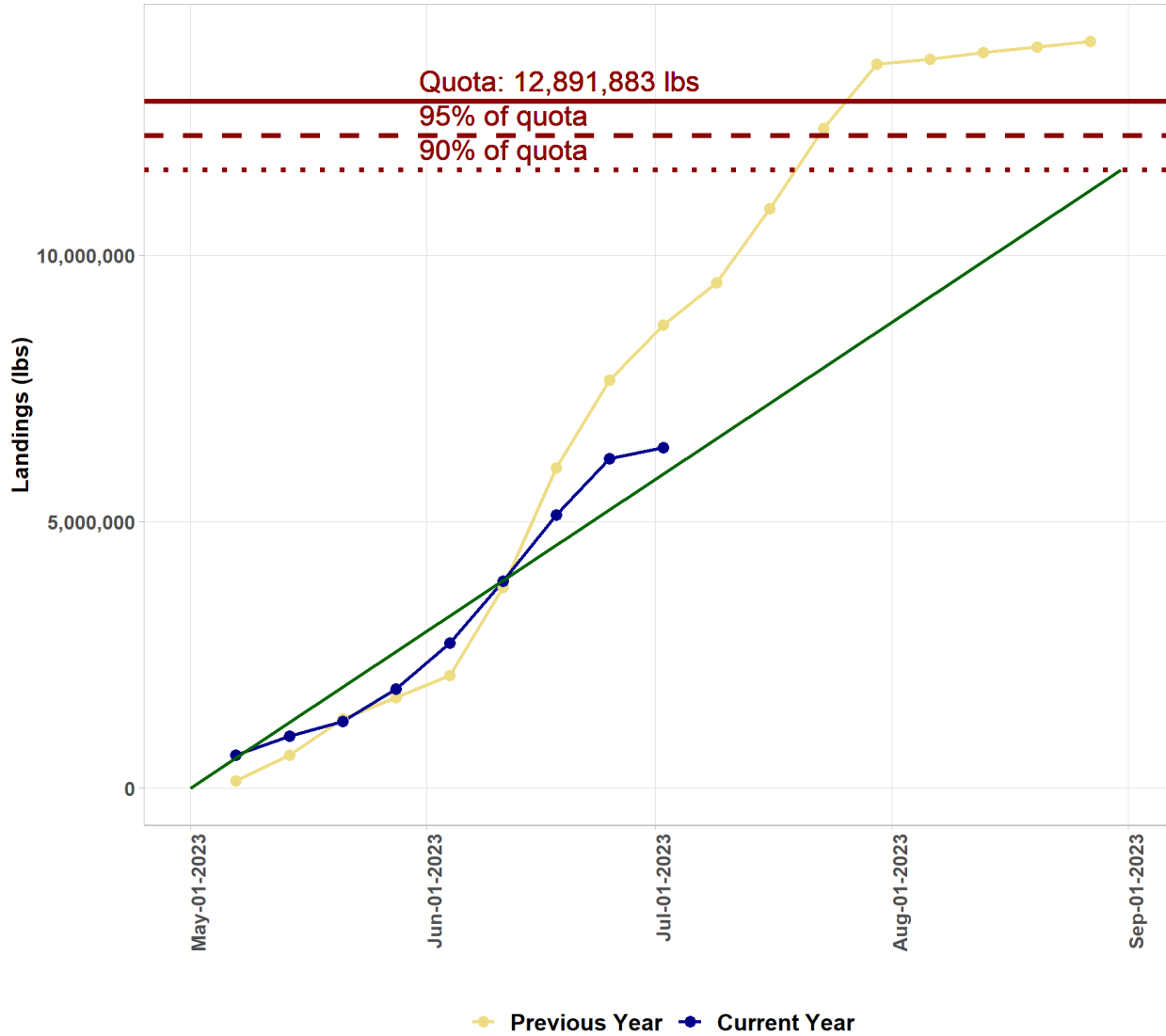


Figure 8. U.S. Preliminary Weekly Trimester 2 Longfin landings; 2023 Trimester 2 in blue, 2022 Trimester 2 in yellow-orange. Through July 6, 2023. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

Table 1. Commercial Longfin landings (live wt) by state in 2022. Source: NMFS unpublished dealer data.

State	Metric Tons
RI	11,787
NJ	2,258
NY	2,059
MA	1,680
CT	456
Other	165
Total	18,406

Table 2. Commercial longfin landings by statistical area in 2021 and 2022. Source: NMFS unpublished VTR data.

2021		2022	
Stat Area	Metric Tons	Stat Area	Metric Tons
537	2,267	537	4,516
613	2,115	613	2,862
616	1,574	616	2,481
622	1,216	622	1,821
626	472	626	1,609
539	408	631/632	978
526	340	538	590
538	264	539	465
611	254	526	388
525	230	611	306
612	152	623	305
167	124	612	217
Other	725	525	176
Total	10,141	562	143
		Other	744
		Total	17,601

Note: VTR expected to be lower than dealer database due to state landings.

Non-Target Catches and Discards

Environmental Assessments for longfin specifications developed by staff include tables of incidental catches with a directed fishery definition of at least 40% of retained catch being longfin squid. Since the Standardized Bycatch Reporting Methodology focuses on discards of managed stocks rather than discards in managed fisheries, staff analyses of discards vary fishery by fishery depending on data availability and historical practices. Staff updated previous analyses with 2021-2022 data – 2020 data was severely impacted by Covid-19. 2021-2022 coverage improved but still only averaged 153 observed longfin squid trips versus the 394 observed annually 2017-2019.

Using discard ratio data from these observed hauls and 2021-2022 average longfin landings (14,624 MT), Table 3 below approximates annual catch/discards in the directed longfin squid fishery from 2021-2022, for species with extrapolated annual catch of at least 10,000 pounds. The method used for the estimates in the table is a custom staff analysis, and is best considered as a relative indicator of species that may be affected by the fishery rather than precise amounts. On the trips identified in this analysis, the 2021-2022 overall discard rate (raw observer data) was 34% (similar to previous analyses).

The observer program creates individual records for some species of interest, mostly larger pelagics and/or less common sharks/rays, as well as tagged fish. Non-expanded counts of these individual fish records from the same trips are provided in Table 4 below.

The longfin squid fishery is also subject to a butterfish discard cap, which has not affected the longfin squid fishery in recent years – weekly monitoring reports are available at <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

Table 3. Longfin Target/Non-Target Catches

NE Fisheries Science Center Common Name	Pounds Observed Caught	Pounds Observed Discarded	Of all discards observed, percent that comes from given species	Percent of given species that was discarded	Pounds of given species caught per mt longfin Kept	Pounds of given species discarded per mt longfin Kept	Rough Annual Catch (pounds) based on 2-year (2021-2022) average of longfin landings (14,624 mt)	Rough Annual Discards (pounds) based on 3-year (2021-2022) average of longfin landings (14,624 mt)
SQUID, ATL LONG-FIN	3,611,912	112,343	6%	3%	2,275	71	33,275,343	1,034,980
BUTTERFISH	608,147	579,258	29%	95%	383	365	5,602,659	5,336,512
SCUP	196,035	164,263	8%	84%	123	103	1,806,008	1,513,303
SQUID, SHORT-FIN	193,786	128,182	6%	66%	122	81	1,785,284	1,180,897
SEA ROBIN, NORTHERN	154,652	154,652	8%	100%	97	97	1,424,757	1,424,757
HAKE, SILVER (WHITING)	105,192	62,946	3%	60%	66	40	969,096	579,902
SKATE, LITTLE	102,443	100,907	5%	99%	65	64	943,777	929,625
HAKE, SPOTTED	94,096	93,250	5%	99%	59	59	866,877	859,077
DOGFISH, SMOOTH	64,557	56,898	3%	88%	41	36	594,741	524,183
SKATE, WINTER (BIG)	62,081	57,322	3%	92%	39	36	571,928	528,091
DOGFISH, SPINY	61,795	61,735	3%	100%	39	39	569,296	568,743
FLOUNDER, SUMMER	54,327	25,611	1%	47%	34	16	500,495	235,949
SEA BASS, BLACK	46,526	36,259	2%	78%	29	23	428,630	334,039
HAKE, RED (LING)	45,971	43,986	2%	96%	29	28	423,517	405,228
SCALLOP, SEA	30,049	26,851	1%	89%	19	17	276,833	247,366
BASS, STRIPED	29,741	28,621	1%	96%	19	18	273,993	263,679
SQUID, NK	26,228	23,625	1%	90%	17	15	241,630	217,648
BLUEFISH	20,094	1,887	0%	9%	13	1	185,121	17,387
SKATE, NK	18,225	16,270	1%	89%	11	10	167,902	149,885
SEA ROBIN, STRIPED	14,567	14,413	1%	99%	9	9	134,198	132,778
SEAWEED, NK	14,098	14,098	1%	100%	9	9	129,878	129,878
MACKEREL, ATLANTIC	13,300	9,409	0%	71%	8	6	122,526	86,684
DORY, BUCKLER (JOHN)	13,251	5,900	0%	45%	8	4	122,081	54,353
FLOUNDER, FOURSPOT	12,893	12,893	1%	100%	8	8	118,779	118,779
MONKFISH (GOOSEFISH)	12,789	6,931	0%	54%	8	4	117,824	63,849
SKATE, CLEARNOSE	10,396	10,331	1%	99%	7	7	95,777	95,172
SKATE, LITTLE/WINTER, NK	9,247	9,226	0%	100%	6	6	85,192	84,999
FLOUNDER, WINTER	8,905	8,751	0%	98%	6	6	82,036	80,623
SKATE, BARNDOR	8,546	8,546	0%	100%	5	5	78,731	78,731
MENHADEN, ATLANTIC	7,400	7,120	0%	96%	5	4	68,176	65,594
CHUB MACKEREL	6,710	6,677	0%	100%	4	4	61,814	61,515

Table 3. Longfin Target/Non-Target Catches (continued)

NE Fisheries Science Center Common Name	Pounds Observed Caught	Pounds Observed Discarded	Of all discards observed, percent that comes from given species	Percent of given species that was discarded	Pounds of given species caught per mt longfin Kept	Pounds of given species discarded per mt longfin Kept	Rough Annual Catch (pounds) based on 2-year (2021-2022) average of longfin landings (14,624 mt)	Rough Annual Discards (pounds) based on 3-year (2021-2022) average of longfin landings (14,624 mt)
HAKE, MIX SIL/OFF	5,656	4,667	0%	83%	4	3	52,105	42,999
STARFISH, SEASTAR, NK	5,241	5,241	0%	100%	3	3	48,285	48,285
LONG-FIN EGGS	4,957	4,957	0%	100%	3	3	45,664	45,664
DOGFISH, CHAIN	4,503	4,503	0%	100%	3	3	41,482	41,482
BOARFISH, DEEPBODY	4,338	4,338	0%	100%	3	3	39,962	39,962
SEA ROBIN, NK	4,310	4,310	0%	100%	3	3	39,702	39,702
CRAB, JONAH	4,150	4,118	0%	99%	3	3	38,233	37,941
CRAB, LADY	3,928	3,928	0%	100%	2	2	36,186	36,186
WEAKFISH	3,907	3,510	0%	90%	2	2	35,998	32,334
CRAB, HORSESHOE	3,654	3,617	0%	99%	2	2	33,659	33,323
CRAB, ROCK	3,115	3,115	0%	100%	2	2	28,701	28,701
HAKE, NK	3,112	2,543	0%	82%	2	2	28,666	23,431
FISH, NK	2,813	2,630	0%	94%	2	2	25,915	24,231
BEARDFISH	2,568	2,568	0%	100%	2	2	23,661	23,661
SKATE, ROSETTE	2,368	2,368	0%	100%	1	1	21,817	21,817
KINGFISH, NORTHERN	2,235	1,308	0%	59%	1	1	20,587	12,047
RAY, BULLNOSE	2,157	2,157	0%	100%	1	1	19,868	19,868
CRAB, SPIDER, NK	2,053	2,053	0%	100%	1	1	18,912	18,912
SHAD, AMERICAN	1,797	1,786	0%	99%	1	1	16,559	16,455
TAUTOG (BLACKFISH)	1,758	1,619	0%	92%	1	1	16,199	14,915
LOBSTER, AMERICAN	1,744	1,301	0%	75%	1	1	16,068	11,986
HAKE, MIX RED/WHITE/SPOTD/SOUTH	1,711	1,573	0%	92%	1	1	15,760	14,489
TILEFISH, GOLDEN	1,354	432	0%	32%	1	0	12,474	3,984
SCAD, ROUGH	1,320	1,320	0%	100%	1	1	12,161	12,161
PUFFER, NORTHERN	1,280	1,264	0%	99%	1	1	11,791	11,647
ALEWIFE	1,271	1,271	0%	100%	1	1	11,709	11,709
EEL, CONGER	1,254	607	0%	48%	1	0	11,553	5,596
DOGFISH, NK	1,233	1,233	0%	100%	1	1	11,359	11,359
SEA ROBIN, ARMORED	1,223	1,223	0%	100%	1	1	11,267	11,267
TILEFISH, BLUELINE	1,093	407	0%	37%	1	0	10,071	3,751

Table 4. Counts (not expanded) in Individual Animal Records on all observed “longfin” trips, 2021-2022

COMNAME	count
SHARK, SANDBAR (BROWN)	132
BONITO, ATLANTIC	130
STINGRAY, ROUGHTAIL	118
SHARK, ATL ANGEL	94
RAY, TORPEDO	66
MOLA, OCEAN SUNFISH	62
SWORDFISH	41
SHARK, CARCHARHINID,N	37
TUNA, NK	34
SHARK, TIGER	29
SHARK, NK	28
SHARK, HAMMERHEAD, SC	23
STURGEON, ATLANTIC	19
SHARK, THRESHER	15
STINGRAY, NK	13
SHARK, BASKING	12
TUNA, LITTLE (FALSE A	12
AMBERJACK, NK	11
SHARK, BLUE (BLUE DOG	10
SHARK, WHITE	9
RAY, BUTTERFLY, SPINY	8
STINGRAY, BLUNTNOSE	8
BARRACUDA, NK	6
MOLA, NK	6
TUNA, YELLOWFIN	5
COBIA	4
GROUPE, NK	4
SHARK, SPINNER	4
MACKEREL, FRIGATE	3
SHARK, GREENLAND	3
SHARK, PORBEAGLE (MAC	3
SHARK, SILKY	3
SHARK, BLACK TIP	2
SHARK, PELAGIC	2
SHARK, SAND TIGER	2
TUNA, BIG EYE	2
TUNA, BLUEFIN	2
DOLPHINFISH (MAHI MAH	1
RAY, BUTTERFLY, NK	1
RAY, NK	1
SHARK, CARCHARHINID,	1
SHARK, HAMMERHEAD, NK	1
SHARK, HAMMERHEAD,NK	1
STURGEON, NK	1
TUNA, SKIPJACK	1

THIS IS THE END OF THE DOCUMENT



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 26, 2023
To: Council
From: Jason Didden
Subject: *Illex* Hold Baseline Framework

Two documents are included for Council consideration:

1. Summary of Mackerel, Squid, and Butterfish (MSB) Joint Advisory Panel and Committee meeting.
2. Framework document draft/outline.

The goal for this agenda item is to endorse a range of alternatives to be included in the framework. Staff will then continue relevant analyses and document development prior to anticipated final action at the October 2023 Council meeting.



MSB Committee and AP Meeting Summary

June 1, 2023 Webinar

The Mid-Atlantic Fishery Management Council's (Council) Mackerel, Squid, and Butterfish (MSB) Committee and Advisory Panel (AP) met jointly on June 1, 2023 at 9am. The purpose of this meeting was to review a draft document for the *Illex* Vessel Hold Capacity Framework (FW) Adjustment action, develop any appropriate alternatives, and make recommendations to the Council.

MSB Committee Attendees (8 of 11): Peter Hughes (Chair), Dan Farnham, Emily Gilbert, Adam Nowalsky, Michelle Duval, Sara Winslow, Eric Reid, and Melanie Griffin.

MSB AP Attendees (6 of 16): Dan Farnham Jr, Gerry O' Neill, Greg DiDomenico, Jeff Kaelin, Katie Almeida, and Meghan Lapp.

Other Attendees: Jason Didden, John Almeida, Arieli, Ashleigh McCord, Carly Bari, and Maria Fenton.

Jason Didden of Council staff first provided an overview of the purpose and proposed alternatives, as described in the draft framework document posted to the calendar page for this meeting.

AP Comments

There is concern how the processing type declaration would work and whether it could become binding in the future. Staff noted some potentially clarifying language that would be added to the draft framework document. Staff also noted that if the Council sets the parameters it might be less likely to be binding versus if NMFS requires it administratively. There was also some concern that a processing type declaration may be less appropriate for longfin squid – staff noted the draft document has *Illex* and longfin processing declarations as two separate alternatives.

There was a request to allow existing vessel hold measurements to be used for *Illex* permits in CPH. The Committee motion below recommended this measure, and it has been added to the draft framework document.

There was input from AP members on both sides generally whether additional baselines besides the existing length and horsepower baselines (and associated upgrade restrictions) are needed. On the “for” side, the general concerns were overcapacity and fairness for vessels that are already subject to a hold upgrade restriction due to their mackerel permits. On the “against” side there was concern about reducing flexibility, specifically related to replacing aging vessels.

Committee Discussion/Motions

There was discussion whether not requiring mid-year updates if vessels switched processing type would degrade the usability of the information. Staff responded that if vessels switched processing type from year to year, then specific follow-up could be targeted. There was also discussion whether this information would be proprietary or public like other permit information currently available on NMFS's website (if confidential, such information would still likely be usable when used in grouped analyses).

There was discussion of what an implementation timeline might look like – NMFS reviewed the mackerel timeline and vessels were given a year from the final rule to obtain measurements. On a related question, fish hold upgrades could be done separate from length/horsepower upgrades, but the original length/horsepower baselines and upgrade restrictions would still remain.

The Committee approved the following motions:

1. If a permit in CPH happened to have an existing volumetric hold measurement that met the measurement certification requirements, that hold measurement would be used to establish a vessel hold baseline.

Reid/Duval, Motion passed by unanimous consent.

(context: recommend to be added as part of alternatives)

2. I move that the Committee recommend that the Council proceed with FW development with the modifications recommended by the Committee on June 1, 2023.

Reid/Duval, Motion passes by unanimous consent.

Next Steps

The Council will review a range of alternatives in a draft framework document in August 2023, which will be "Framework Meeting 1" for this action.

Illex Hold Framework
MACKEREL, SQUID, AND BUTTERFISH (MSB)
FISHERY MANAGEMENT PLAN

*Measures to implement a volumetric vessel hold baseline and
hold upgrade restriction.*

Framework Draft Document/Outline 7/26/2023

Prepared by the

Mid-Atlantic Fishery Management Council (Council) in collaboration with the National
Marine Fisheries Service (NMFS)

Council Address

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

NMFS Address

NMFS Greater Atlantic Regional Fisheries
55 Great Republic Drive
Gloucester, MA 01930

Framework Meeting 1: August 2023
Framework Meeting 2: Planned October 2023

1.0 EXECUTIVE SUMMARY AND TABLE OF CONTENTS

This Framework would consider implementing a volumetric vessel hold baseline requirement and upgrade restriction for all *Illex* limited access permits. A similar volumetric requirement is in place for the directed mackerel fishery, and most regional (i.e. Mid-Atlantic and New England) limited access programs have other baselines (horsepower and length) to control increases in fishing power/capacity.

Overcapacity is a common characteristic of most fisheries except those managed with tradable quota systems (variously known as ITQ¹s (e.g. surfclam/ocean quahog), IFQ²s (e.g. golden tilefish), and/or catch shares). Public perspectives on capacity in the *Illex* fishery have been consistently diverse starting from the early 2019 scoping of the largely disapproved *Illex* Permit Amendment³ through to a recent November 2022 Joint MSB Committee/Advisory Panel (AP) Meeting that considered follow-up actions after the *Illex* Permit Amendment's disapproval. Comments have ranged from taking no action at all, to measures that would reduce the existing overcapacity by eliminating some existing limited access permits (overcapacity was indicated by NMFS' Northeast Fisheries Science Center staff technical analyses conducted as part of the *Illex* Permit Amendment).

The rationale/goal for baselines as described in the 1998 Consistency Amendment developed by NMFS is “capping fishing power.” This aligns with issues mentioned in several national standards guidelines, especially #5 Efficiency: “Efficiency. In theory, an efficient fishery would harvest the OY with the minimum use of economic inputs such as labor, capital, interest, and fuel. Efficiency in terms of aggregate costs then becomes a conservation objective, where “conservation” constitutes wise use of all resources involved in the fishery, not just fish stocks.” So capping additional vessel fishing power (“capital”) to catch Optimum Yield (OY) becomes a conservation objective because the “wise use of all resources” is being addressed. ([50 CFR 648.4\(a\)\(5\)\(iii\)](#))

The objective of this action is therefore to consider requiring a volumetric vessel hold baseline requirement and upgrade restriction for all *Illex* limited access permits, with a similar purpose as other baseline requirements, i.e. to cap fishing power. There will be a tradeoff involved as the flexibility of the fleet is somewhat reduced, but the risks from uncontrolled fishing power in fishing fleets are well documented throughout fisheries literature and negative consequences of “increased fishing pressure” is a principal “finding” of Congress as enshrined in the Magnuson-Stevens Fishery Conservation and Management Act.

Two alternatives to add information collected during permit re-applications about vessel processing are also included for Council consideration – while they are not directly related to capacity issues, the relevant information has been discussed frequently as likely to be useful for various squid assessment analyses.

¹ ITQ = Individual Transferable Quota

² IFQ = Individual Fishing Quota

³ This action would have reduced permits in the fishery based on updated catch-based qualification criteria

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2.0 LIST OF COMMON ACRONYMS AND ABBREVIATIONS

ABC	Acceptable Biological Catch
ACL	Annual Catch Limit
ACT	Annual Catch Target
ASMFC	Atlantic States Marine Fisheries Commission or Commission
B	Biomass
CFR	Code of Federal Regulations
CPH	Confirmation of Permit History
CV	coefficient of variation
DAH	Domestic Annual Harvest
DAP	Domestic Annual Processing
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FMP	Fishery Management Plan
FR	Federal Register
GB	Georges Bank
GOM	Gulf of Maine
IOY	Initial Optimum Yield
M	Natural Mortality Rate
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act (as amended)
MSB	Atlantic Mackerel, Squid, Butterfish
MSY	Maximum Sustainable Yield
MT (or mt)	Metric Tons (1 mt equals about 2,204.62 pounds)
NE	Northeast
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service (NOAA Fisheries)
NOAA	National Oceanic and Atmospheric Administration
OFL	Overfishing Level
PBR	Potential Biological Removal
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SNE	Southern New England
SSC	Scientific and Statistical Committee
US	United States
VTR	Vessel Trip Report

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4.0 INTRODUCTION, BACKGROUND, AND PROCESS

The Council established management of *Illex* in 1978 and the management unit includes all federal East Coast waters.

Access is limited with about 75 moratorium permits; Between 5-40 permits may be active in a given year. Trip limits are triggered when the quota is approached. Incidental permits are limited to 10,000 pounds per trip. Additional summary regulatory information is available at <https://www.fisheries.noaa.gov/new-england-mid-atlantic/resources-fishing/resources-fishing-greater-atlantic-region>.

The 2022 quota was 38,192 MT, based on a 40,000 MT Acceptable Biological Catch (ABC) and a 4.52% discard rate (the mean plus one standard deviation of the most recent 10 years of observed discard rates in the previous assessment). Recent SBRM discard rates have been similar, though are not based on calendar years. 2017-2019 discards in the recent Research Track Assessment were also a similar portion of total catch. A minor modification (reduction) of discard set-asides may be implemented in coming years. The fishery closes when 96% of the quota is projected to be landed. In 2021 the fishery closed effective August 30, 2021 – there was not a closure in 2022 as only about 14% of the quota was landed.

Recreational catch of *Illex* is believed to be negligible. There are no recreational regulations except for party/charter vessel permits and associated reporting.

A 2020 action to reduce *Illex* permits given overcapitalization in the fishery was disapproved: <https://www.fisheries.noaa.gov/bulletin/amendment-22-mackerel-squid-and-butterfish-fishery-management-plan-decision>. Good *Illex* availability and increased vessel participation in 2017-2021 triggered early closures, highlighting the issue of overcapacity in this fishery, which was also described in the disapproved *Illex* Permit Amendment via technical capacity analyses.

As a high volume fishery, vessel fishing power or “capacity” may be substantially increased within the existing length and horsepower restrictions by modifying the vessel’s hold capacity, leading the Council to further consider vessel hold restrictions for the fishery.

4.1 OBJECTIVES, PURPOSE, AND NEED

The objective of this action is to consider requiring a volumetric vessel hold baseline requirement and upgrade restriction for all *Illex* limited access permits, with a similar purpose as other baseline requirements, i.e. to cap fishing power. There will be a tradeoff involved as the flexibility of the fleet is somewhat reduced, but the risks from uncontrolled fishing power in fishing fleets are well documented throughout fisheries literature and negative consequences of “increased fishing pressure” is a principal “finding” of Congress as enshrined in the Magnuson-Stevens Fishery Conservation and Management Act. This action is needed because effective caps on vessel fishing power in the *Illex* fishery do not exist.

4.2 REGULATORY AUTHORITY / PROCESS

The discretionary provisions of the MSA allow Councils to include measures that restrict the types of fishing vessels, and those provisions have led to the current baseline specifications.

The Council uses “framework adjustments” to amend measures previously used or considered, and permitting and vessel size restrictions are noted frameworkable options, as well as “Any other management measures currently included in the FMP.” Vessel hold capacity restrictions are specifically used in the FMP already for the mackerel fishery. Vessel hold capacity restrictions were also considered specifically for the *Illex* fishery in the disapproved *Illex* Permit Amendment, so hold capacity restrictions are not a new concept for this FMP or fishery.

For frameworks, “The MAFMC shall develop and analyze appropriate management actions over the span of at least two MAFMC meetings. The MAFMC must provide the public with advance notice of the availability of the recommendation(s), appropriate justification(s) and economic and biological analyses, and the opportunity to comment on the proposed adjustment(s) at the first meeting and prior to and at the second MAFMC meeting.”
[50 CFR 648.25(a)(1)]

It is anticipated that the August 2023 Council meeting will be Framework Meeting #1 and final action will be taken later in 2023.

5.0 WHAT ALTERNATIVES ARE BEING CONSIDERED?

5.1 ALTERNATIVE 1: No Action/Status Quo = Current Baselines and Reporting Only

Vessel replacements/upgrades for *Illex* squid moratorium permits are limited relative to a vessel’s baselines:

- (1) The upgraded vessel's horsepower may not exceed the horsepower of the vessel's baseline specifications by more than 20 percent.
- (2) The upgraded vessel's length overall may not exceed the vessel's baseline specifications by more than 10 percent.

The vessel baseline specifications are the respective specifications (length, horsepower) of the vessel that was initially issued a limited access permit as of the date the initial vessel applied for such permit, and the baseline specifications are recorded in NMFS databases.

Also, no changes would be made to the information collected during the annual permit re-application process for squid permits.

5.2 ALTERNATIVE 2: Additional Volumetric Vessel Hold Baseline

If a vessel possesses a volumetric hold baseline related to its Tier 1 or Tier 2 mackerel permit, that hold baseline would automatically be incorporated for its *Illex* moratorium permit also.

For other *Illex* moratorium permit vessels, NMFS would publish notice that:

In addition to other baseline specifications, the volumetric fish hold capacity of a vessel at the time it submits a hold baseline certification (a date would be published by NMFS) will be considered a baseline specification. The fish hold capacity measurement must be certified by one of the following qualified individuals or entities: An individual credentialed as a Certified Marine Surveyor with a fishing specialty by the National Association of Marine Surveyors (NAMS); an individual credentialed as an Accredited Marine Surveyor with a fishing specialty by the Society of Accredited Marine Surveyors (SAMS); employees or agents of a classification society approved by the Coast Guard pursuant to [46 U.S.C. 3316\(c\)](#); the Maine State Sealer of Weights and Measures; a professionally-licensed and/or registered Marine Engineer; or a Naval Architect with a professional engineer license. The fish hold capacity measurement submitted to NMFS must include a signed certification by the individual or entity that completed the measurement, specifying how they meet the definition of a qualified individual or entity.

If an *Illex* moratorium permit is “on the shelf” in Confirmation of Permit History (CPH) when hold certifications are due, the hold capacity baseline for such vessels will be the hold capacity of the first replacement vessel after the permit is removed from CPH and measured as described above.

If a permit in CPH happened to have an existing volumetric hold measurement that met the measurement certification requirements, that hold measurement would be used to establish a vessel hold baseline for *Illex* permits. **Committee-recommended addition**

Replacement/upgraded vessels’ volumetric fish hold capacity may not exceed by more than 10 percent the volumetric fish hold capacity of the vessel’s baseline specifications. The modified fish hold, or the fish hold of the replacement vessel, must be resurveyed by a surveyor as described above unless the replacement vessel already had an appropriate certification.

5.3 ALTERNATIVE 3: Annual Processing Type Reporting: *Illex*

Information on processing has the potential to be used for catch per unit of effort analyses in squid fisheries. Each year when an *Illex* moratorium permit re-applies, it would have to state its intended primary processing type for *Illex* for that year. NMFS will specify relevant processing types, including freezing at-sea, refrigerated sea water, fresh/iced, etc. The statement of intent would not be limiting upon a vessel if it decides to change processing methods mid-year, and there would not be a requirement to notify NMFS of changes mid-year.

5.4 ALTERNATIVE 4: Annual Processing Type Reporting: Longfin

Information on processing has the potential to be used for catch per unit of effort analyses in squid fisheries. Each year when a Tier 1 longfin permit re-applies, it would have to state its intended primary processing type for longfin for that year. NMFS will specify relevant processing types,

including freezing at-sea, refrigerated sea water, fresh/iced, etc. The statement of intent would not be limiting upon a vessel if it decides to change processing methods mid-year, and there would not be a requirement to notify NMFS of changes mid-year.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

6.1 Description of the Managed Resource (*Illex*) and Non-Target Species

Illex

Illex is a semi-pelagic/semi-demersal schooling cephalopod species that lives less than one year and is distributed between Newfoundland and the Florida Straits. *Illex* is a semelparous, terminal spawner whereby spawning and death occur within several days of mating. The northern stock component (also highly variable) in NAFO Subareas 3 and 4, is assessed and managed separately by the Northwest Atlantic Fisheries Organization (NAFO). The southern/U.S. stock component is located in NAFO Subareas 5 and 6 between the Gulf of Maine and Cape Hatteras, NC and is managed by the Mid-Atlantic Fishery Management Council (the Council or MAFMC) and NMFS. Additional life history information is detailed in the EFH document for the species, located at: <http://www.nefsc.noaa.gov/nefsc/habitat/efh/>.

The 2021 research track assessment (RTA) was unable to develop a method to resolve stock status, so the stock will officially remain “unknown” with respect to being overfished or overfishing. The RTA Review Panel agreed with the RTA Working Group Report that indications from the various assessment approaches were that the stock was lightly fished in 2019. However, the review report stated that the term “lightly fished” should be interpreted with caution because it has no specific definition relating to sustainable exploitation. After evaluating related analyses, the MAFMC’s Scientific and Statistical Committee (SSC) recommended continuing the 2022 40,000 metric ton (MT) *Illex* Acceptable Biological Catch (ABC) to start 2023. In March 2023 the SSC will review updated analyses and may revise their 2023 ABC recommendation

In light of the failure of the assessment to produce accepted reference points to guide ABC setting, the SSC had to rely on an ad-hoc approach to setting a 2023 ABC that would meet the Council’s risk policy to avoid overfishing and achieve optimum yield. Alternative quotas were examined with respect to their consequences for risk of exceeding escapement targets ranging from 40% to 50%, as has been used for other squid fisheries. In addition, harvest rates of $F=2/3 M$ (natural mortality) have been used for forage species in various assessments around the world. The methodology allowed the SSC to examine the probability of violating the reference point for various levels of catch limits ranging from 24,000 to 60,000 mt. A 40,000 MT ABC was associated with an approximately 5% chance of exceeding a $2/3 F:M$ generic guidance for data poor species. Model results suggested a 40,000 MT ABC provided greater than 50% escapement for *Illex* squid, and a catch of 60,000 MT increases the chance of less escapement in some years. Previous SSC review (March 2022) of the analyses allowed them to conclude that:

- Escapement has been relatively high over the last 10 years, suggesting a relatively small impact of the fishery on the component of the stock that is exploited.
- Assumptions regarding parameters that were inputs to the analyses were thought to lead to minimum likely estimates.
- Distributions of the joint estimate of F:M suggests that exploitation rate in the fishery is likely low.
- By comparison to empirical escapement reference points used to manage squid fisheries elsewhere globally, the current ABC levels are associated with low risks of exceeding those escapement standards.
- A 40,000 MT ABC will lead to a low risk of overfishing.

(MAFMC SSC 2022, MAFMC 2022b)

While *Illex* is biologically a unit stock, the U.S. and Canadian assessments and quotas are currently analyzed, set, and monitored independently (unlike for example Atlantic mackerel where U.S. and Canadian data are integrated into both assessments), so the focus is on the U.S. component of the fishery. More information on the Canadian component is available at <https://www.nafo.int/Science/Stocks-Advice> and the potential usefulness of the NAFO assessment for U.S. management was considered previously by the Council's SSC, e.g. https://www.mafmc.org/s/g_NAFO_Didden.pdf at <https://www.mafmc.org/ssc-meetings/2020/may-12-13>.

Landings and survey information developed for 2022 specifications setting is presented below (Table 1, Figures 1-4).

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Table 1. *Illex* catches and landings limits (TACs) (mt) in NAFO Subareas (SA) 5+6 (within the U.S. EEZ after 1976) and Subareas 3+4 (NAFO and Canadian waters) 1963-2021

Year	Cape Hatteras to the Gulf of Maine SA 5+6 Landings			SA 3+4	SA 3-6 Total	SA 5+6		SA 3-6 Total	TAC (mt)		SA 5+6		
	Domestic	International	Total	Landings	Landings	Discards	Catches	Catches	SA 3+4	SA 5+6	% of TAC Harvested	Fishery Closure Dates	% of SA 3-6 Landings
	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)	(mt)					
1963	810		810	2,222	3,032								
1964	358	2	360	10,777	11,137								
1965	444	78	522	8,264	8,786								
1966	452	118	570	5,218	5,788								
1967	707	288	995	7,033	8,028								
1968	678	2,593	3,271	56	3,327								
1969	562	975	1,537	86	1,623								
1970	408	2,418	2,826	1,385	4,211								
1971	455	6,159	6,614	8,906	15,520								
1972	472	17,169	17,641	1,868	19,509								
1973	530	18,625	19,155	9,877	29,032								
1974	148	20,480	20,628	437	21,065					71,000			98
1975	107	17,819	17,926	17,696	35,622					71,000			50
1976	229	24,707	24,936	41,767	66,703				25,000	30,000	83		37
1977	1,024	23,771	24,795	83,480	108,275				25,000	35,000	71		23
1978	385	17,207	17,592	94,064	111,656				100,000	30,000	59		16
1979	1,593	15,748	17,341	162,092	179,433				120,000	30,000	58		10
1980	299	17,529	17,828	69,606	87,434				150,000	30,000	59		20
1981	615	14,956	15,571	32,862	48,433				150,000	30,000	52		32
1982	5,871	12,762	18,633	12,908	31,541				150,000	30,000	62		59
1983	9,775	1,809	11,584	426	12,010				150,000	30,000	39		96
1984	9,343	576	9,919	715	10,634				150,000	30,000	33		93
1985	5,033	1,082	6,115	673	6,788				150,000	30,000	20		90
1986	6,493	977	7,470	111	7,581				150,000	30,000	25		99
1987	10,102	0	10,102	562	10,664	517	10,619	11,181	150,000	30,000	34		95
1988	1,958	0	1,958	811	2,769	100	2,058	2,869	150,000	30,000	7		71
1989	6,801	0	6,801	5,971	12,772	498	7,299	13,270	150,000	30,000	23		53
1990	11,670	0	11,670	10,975	22,645	341	12,011	22,986	150,000	30,000	39		52
1991	11,908	0	11,908	2,913	14,821	1,150	13,058	15,971	150,000	30,000	40		80
1992	17,827	0	17,827	1,578	19,405	248	18,075	19,653	150,000	30,000	59		92
1993	18,012	0	18,012	2,686	20,698	443	18,455	21,141	150,000	30,000	60		87
1994	18,350	0	18,350	5,951	24,301	354	18,704	24,655	150,000	30,000	61		76
1995	13,976	0	13,976	1,055	15,031	58	14,034	15,089	150,000	30,000	47		93
1996	16,969	0	16,969	8,742	25,711	243	17,212	25,954	150,000	21,000	81		66
1997	13,356	0	13,356	15,614	28,970	1,002	14,358	29,972	150,000	19,000	70		46
1998	23,568	0	23,568	1,902	25,470	586	24,154	26,056	150,000	19,000	124	8/28	93
1999	7,388	0	7,388	305	7,693	1,094	8,482	8,787	75,000	19,000	39		96
2000	9,011	0	9,011	366	9,377	106	9,117	9,483	34,000	24,000	38		96
2001	4,009	0	4,009	57	4,066	466	4,475	4,532	34,000	24,000	17		99
2002	2,750	0	2,750	260	3,010	157	2,907	3,167	34,000	24,000	11		91
2003	6,391	0	6,391	1,133	7,524	166	6,557	7,690	34,000	24,000	27		85
2004	26,097	0	26,097	2,574	28,671	1,402	27,499	30,073	34,000	24,000	109	9/21	91
2005	12,011	0	12,011	578	12,589	1,850	13,861	14,439	34,000	24,000	50		95
2006	13,944	0	13,944	6,981	20,925	1,556	15,500	22,481	34,000	24,000	58		67
2007	9,022	0	9,022	246	9,268	639	9,661	9,906	34,000	24,000	38		97
2008	15,900	0	15,900	534	16,434	1,529	17,429	17,963	34,000	24,000	66		97
2009	18,418	0	18,418	718	19,136	672	19,090	19,808	34,000	24,000	77		96
2010	15,825	0	15,825	120	15,945	569	16,394	16,514	34,000	24,000	66		99
2011	18,797	0	18,797	126	18,923	690	19,487	19,613	34,000	23,328	81		99
2012	11,709	0	11,709	47	11,756	502	12,211	12,258	34,000	22,915	51		100
2013	3,792	0	3,792	27	3,819	315	4,107	4,134	34,000	22,915	17		99
2014	8,767	0	8,767	21	8,788	575	9,342	9,363	34,000	22,915	38		100
2015	2,422	0	2,422	14	2,436	451	2,873	2,887	34,000	22,915	11		99
2016	6,684	0	6,684	152	6,836	320	7,004	7,156	34,000	22,915	29		98
2017	22,516	0	22,516	365	22,881	855	23,371	23,736	34,000	22,915	98	9/15	98
2018	24,117	0	24,117	1,545	25,662	1,407	25,524	27,069	34,000	22,915	105	8/15	94
2019	27,164	0	27,164	2,914	30,078	1,331	28,495	31,409	34,000	24,825	109	8/21	90
2020	28,447	0	28,447	3,099	31,546	1,365	29,812	32,911	34,000	28,644	99	8/31	90
2021	30,886	0	30,886	11,455	42,341	535	31,421	42,876	34,000	31,478	98	8/30	73

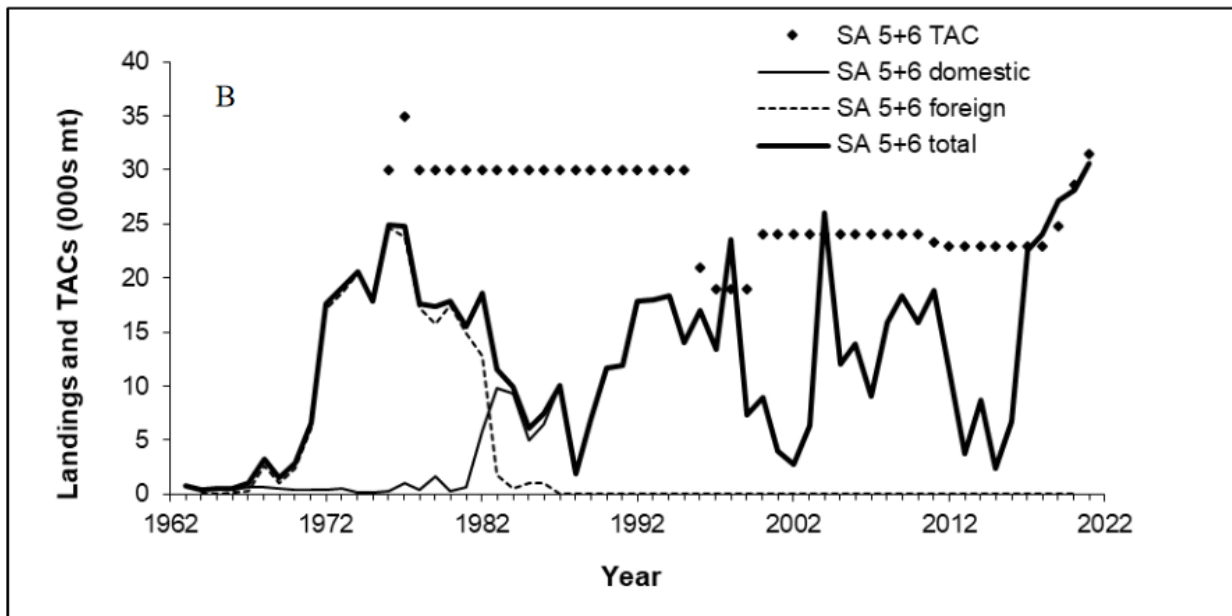
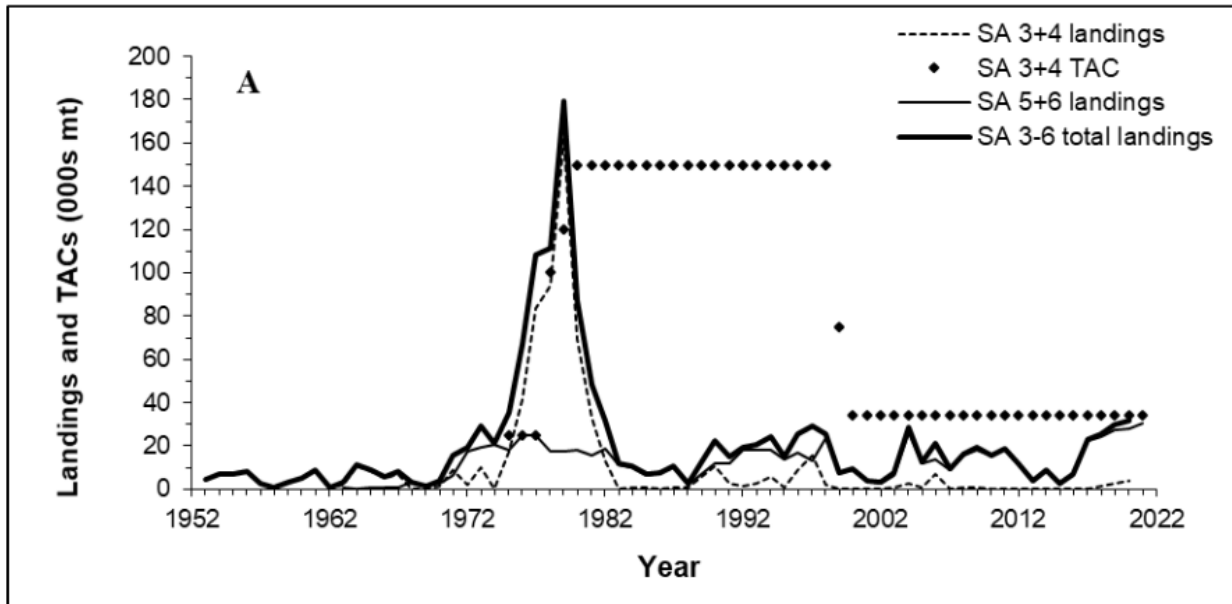


Figure 1. Landings of *Illex illecebrosus* in (A) NAFO Subareas 3-6 and (B) NAFO Subareas 5+6, with respect to landings limits 1963-2021.

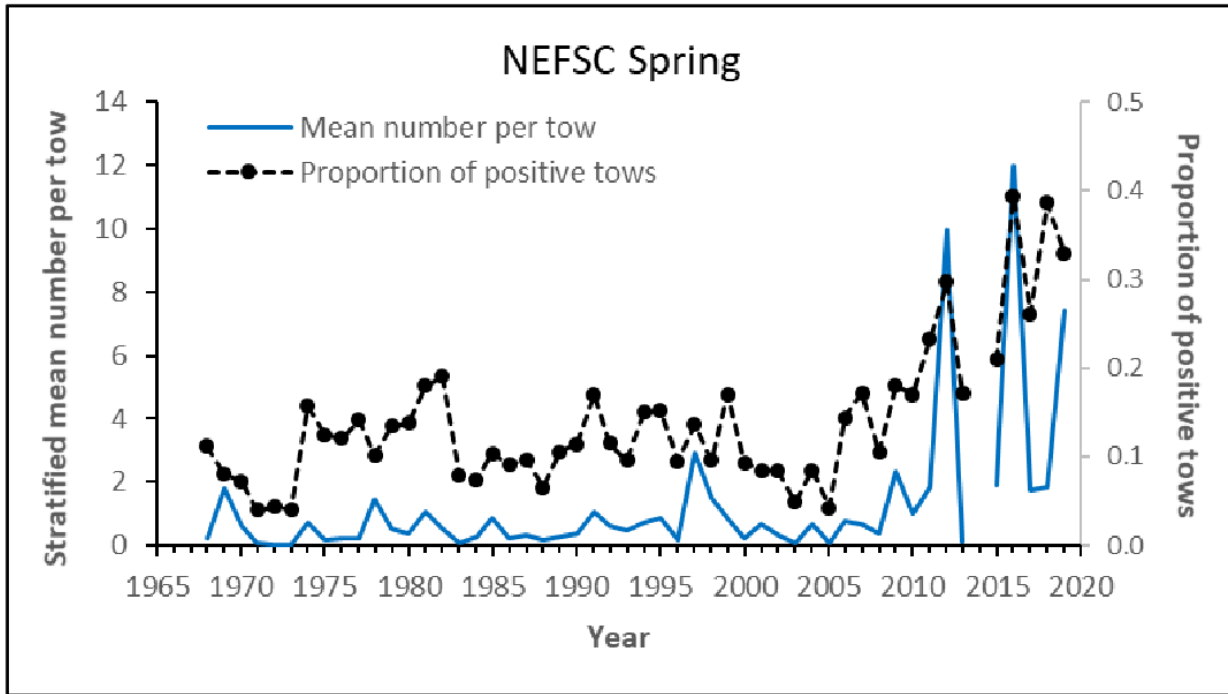


Figure 2. Trends in *Illex* relative abundance indices and the proportion of positive tows derived with data from NEFSC spring bottom trawl surveys conducted on the U.S. shelf during 1968-2019.

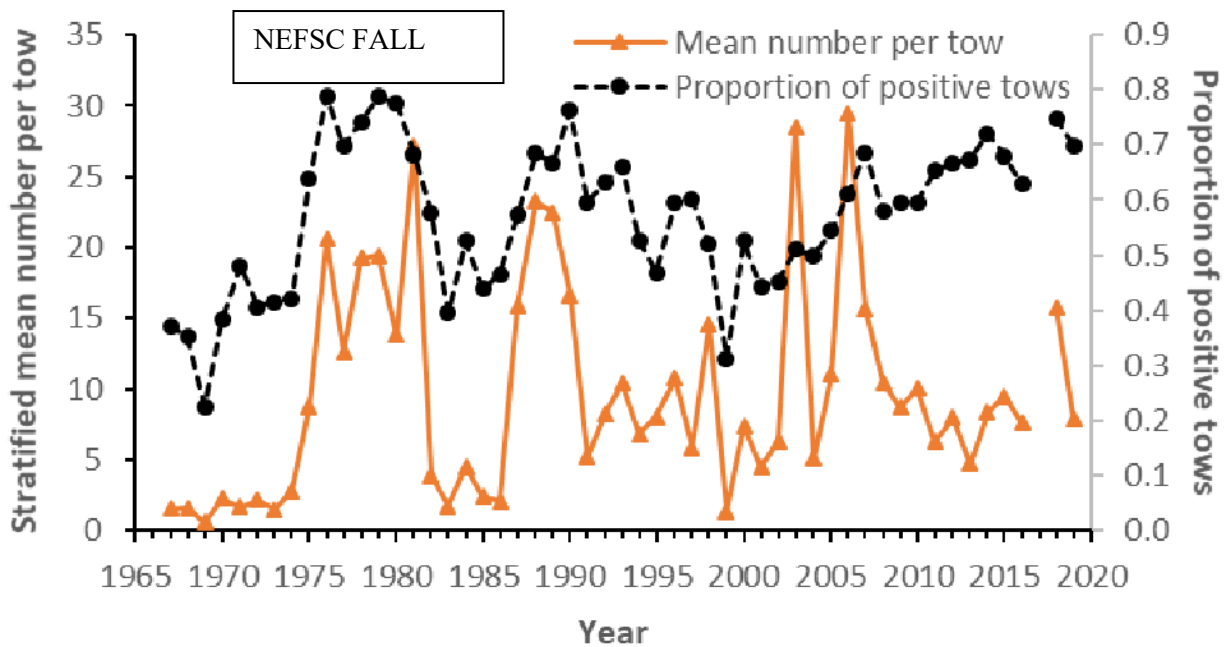


Figure 3. Trends in *Illex* relative abundance indices and the proportion of positive tows derived with data from NEFSC fall bottom trawl surveys conducted on the U.S. shelf during 1967-2019.

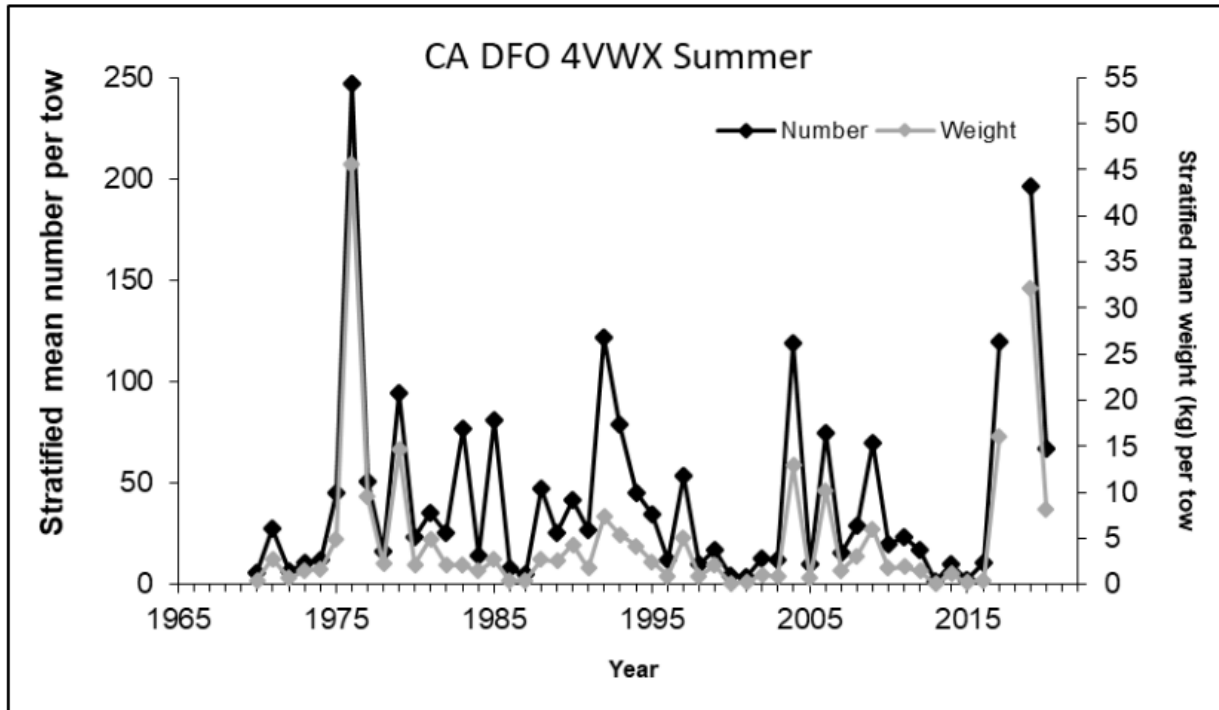


Figure 4. *Illex illecebrosus* relative abundance (stratified mean number per tow) and biomass (stratified mean kg per tow) indices derived with data from the Canada DFO summer (July) bottom trawl surveys conducted in Division 4VWX during 1970-2019.*

*Indices were not computed for the 2018 survey because large areas of *Illex* habitat could not be sampled due to survey vessel mechanical problems.

Non-Target Species

Due to reduced observer coverage in 2020-2022 due to Covid-19, observer data from 2017-2019 still best describe incidental catch in the *Illex* fishery. On the *Illex* trips identified in this analysis, the 2017-2019 overall discard rate was 2%. For non-target species that are managed under their own FMP, incidental catch/discards are also considered as part of the management of that fishery.

The primary database used to assess discarding is the NMFS Observer Program database, which includes data from trips that had trained observers onboard to document discards. One critical aspect of using this database to describe discards is to correctly define the trips that constitute a given directed fishery. A flexible criteria of what captains initially intend to target, how they may adjust targeting over the course of a trip, and what they actually catch would be ideal but is impracticable. From 2017-2019 there were on average 61 observed trips annually where *Illex* accounted for at least 50% of retained catch, and those trips form the basis of the following analysis. These trips made 1,298 hauls of which 93% were observed. Hauls may be unobserved for a variety of reasons, for example transfer to another vessel without an observer, observer not on station, haul slipped (dumped) in the water before observing, etc.

The observed *Illex* kept on these trips accounted for approximately 15% of the total *Illex* landed (this is the overall coverage rate based on weight). While a very rough estimate, especially given non-accounting for spatial and temporal trends, one can use the information in the table immediately following and the fact that about 24,597 mt of *Illex* were caught annually 2017-2019 to

roughly estimate annual incidental catch and discards for the species in the table. Readers are strongly cautioned that while this is a reasonable approach for a quick, rough, and relative estimate given the available data, it is highly imprecise and does not follow the protocol used for official discard estimates. As a minimum threshold, only species estimated to be caught at a level more than 10,000 pounds per year are included (captures 92% of all discards). Species with a “*” are overfished, subject to overfishing, or otherwise considered depleted (none are caught in substantial quantities in the *Illex* fishery).

As listed in the table below the amounts of the various species (that are within this FMP or others) discarded in the *Illex* fishery, while rough approximations, are very low, including for the species noted to be overfished or otherwise depleted (Atlantic mackerel, bluefish, and red hake⁴). The amounts discarded for other species including those in the FMP (*Illex* squid, longfin squid, butterfish, and chub mackerel) all comprise a negligible portion of the catch and/or catch limits for those species.

Table 2. Incidental Catch and Discards in the *Illex* Squid Fishery.

NE Fisheries Science Center Common Name	Pounds Observed Caught	Pounds Observed Discarded	Of all discards observed, percent that comes from given species	Percent of given species that was discarded	Pounds of given species caught per mt <i>Illex</i> Kept	Pounds of given species discarded per mt <i>Illex</i> Kept	Rough Annual Catch (pounds) based on 3-year (2017-2019) average of <i>Illex</i> landings (24,597 mt)	Rough Annual Discards (pounds) based on 3-year (2017-2019) average of <i>Illex</i> landings (24,597 mt)
SQUID, SHORT-FIN	24,472,176	236,856	52%	1%	2,226	22	54,757,008	529,970
SQUID, ATL LONG-FIN	137,434	1,266	0%	1%	13	0	307,510	2,833
DORY, BUCKLER (JOHN)	59,564	15,045	3%	25%	5	1	133,275	33,663
MACKEREL, CHUB	50,659	18,909	4%	37%	5	2	113,349	42,310
BUTTERFISH	41,301	37,276	8%	90%	4	3	92,411	83,406
HAKE, SPOTTED	35,344	32,203	7%	91%	3	3	79,082	72,054
DOGFISH, SMOOTH	19,930	19,892	4%	100%	2	2	44,595	44,508
BEARDFISH	14,033	5,541	1%	39%	1	1	31,398	12,398
HAKE, SILVER (WHITING)	9,919	8,168	2%	82%	1	1	22,194	18,275
FISH, NK	8,332	8,310	2%	100%	1	1	18,642	18,595
SEA ROBIN, NORTHERN	8,078	8,078	2%	100%	1	1	18,075	18,075
MACKEREL, ATLANTIC *	7,902	5,374	1%	68%	1	0	17,682	12,024
SCUP	7,774	5,561	1%	72%	1	1	17,395	12,443
SQUID, NK	6,020	6,020	1%	100%	1	1	13,470	13,470
BLUEFISH *	5,052	1,836	0%	36%	0	0	11,303	4,108
MONKFISH (GOOSEFISH)	4,742	2,211	0%	47%	0	0	10,609	4,947
HAKE, RED (LING) *	4,637	4,280	1%	92%	0	0	10,376	9,576

The observer program creates individual animal records for some fish species of interest, mostly larger pelagics and/or elasmobranchs, as well as tagged fish. Counts of these individual fish records from the same trips are provided in the table below.

⁴ The 2023 ABC for Atlantic mackerel is over 17 million pounds, the 2023 bluefish ABC is over 30 million pounds, and the 2023 combined red hake ABCs are over 10 million pounds.

Table 3. Counts of fish in Individual Animal Records on observed *Illex* trips from 2017-2019

COMNAME	count
DOLPHINFISH (MAHI MAH)	4
GROUPEL, SNOWY	3
MARLIN, WHITE	1
MOLA, NK	4
MOLA, OCEAN SUNFISH	31
MOLA, SHARPTAIL	1
RAY, TORPEDO	37
SHARK, ATL ANGEL	1
SHARK, BASKING	14
SHARK, BLUE (BLUE DOG)	1
SHARK, CARCHARHINID,N	4
SHARK, GREENLAND	2
SHARK, HAMMERHEAD, SC	14
SHARK, HAMMERHEAD,NK	7
SHARK, NIGHT	3
SHARK, NK	3
SHARK, SANDBAR (BROWN)	48
SHARK, SPINNER	1
SHARK, THRESHER, BIGE	1
SHARK, TIGER	17
STINGRAY, ROUGHTAIL	19
WORDFISH	108
TUNA, BLUEFIN	1
TUNA, LITTLE (FALSE A)	9
TUNA, YELLOWFIN	3
WRECKFISH	1

6.2 Human Communities and Economic Environment

This section describes the performance of the *Illex* fishery to allow the reader to understand its socio-economic importance. The EA for the rejected *Illex* Permit Amendment contains additional detail about the *Illex* fishery, including demographic information on key ports – see <https://www.mafmc.org/supporting-documents>. Also see NMFS’ communities page at: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/socioeconomics/socioeconomic-cultural-and-policy-research-northeast>.

The most obvious way that human communities are affected by the *Illex* fishery is from the revenues generated, and the jobs created. The affected communities include both individuals directly involved in harvesting and processing as well as indirect support services (e.g. vessel maintenance, insurance, ice, etc.). While the direct data points that are most available are landings and revenues, it is important to keep in mind that by contributing to the overall functioning of and employment in coastal communities, the fishery has indirect social impacts as well. Social impacts are strongly aligned with changes to fishing opportunities and while difficult to measure can include impacts to families from income changes/volatility, safety-at-sea (related to changes in fishery operations due to regulation changes), job satisfaction, and/or frustration by individuals due to management’s impacts (especially if they perceive management actions to be unreasonable or ill-informed).

Recent Fishery Performance

This section establishes a descriptive baseline for the fishery with which to compare actual and predicted future socio-economic changes that result from management actions. The 2022 *Illex*

Fishery Information Document and 2022 MSB Fishery Performance Report have details on recent commercial *Illex* fishing activity, summarized below. These are available at <https://www.mafmc.org/msb>. There is negligible recreational catch.

Figure 5 below, from a previous Science Center data update, describes *Illex* catch 1963-2019 and highlights the early foreign fishery and then domestication of the fishery. Figures 6-7 describe domestic landings, ex-vessel revenues, and prices (inflation adjusted) 1996-2022. Data since 1996 is more reliable than previous data due to improvements in reporting requirements. The Gross Domestic Product Implicit Price Deflator was used to report revenues/prices as “2022 dollars.” Figure 8 illustrates preliminary weekly 2021 (yellow-orange) and 2022 (blue) landings through the year.

Most recent *Illex* landings occurred in RI, NJ, and MA, but further breakdown may violate data confidentiality rules. Table 4 provides preliminary information on *Illex* landings by statistical area for 2022. Table 5 describes vessel participation over time.

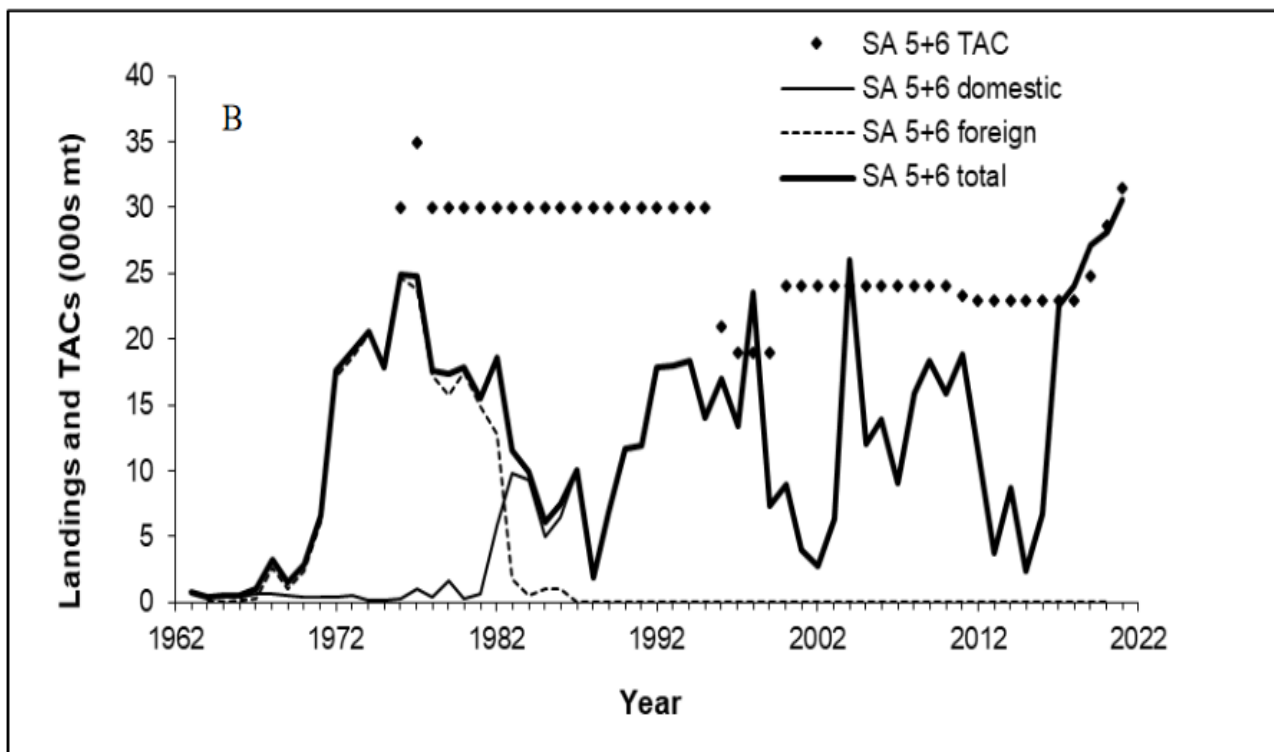


Figure 5. Total annual U.S. *Illex* catches (mt) by the U.S. and other countries for 1963-2021.

Sources: NEFSC *Illex* Data update, available at <https://www.mafmc.org/ssc-meetings/2022/july-25-26> and NMFS unpublished dealer data.

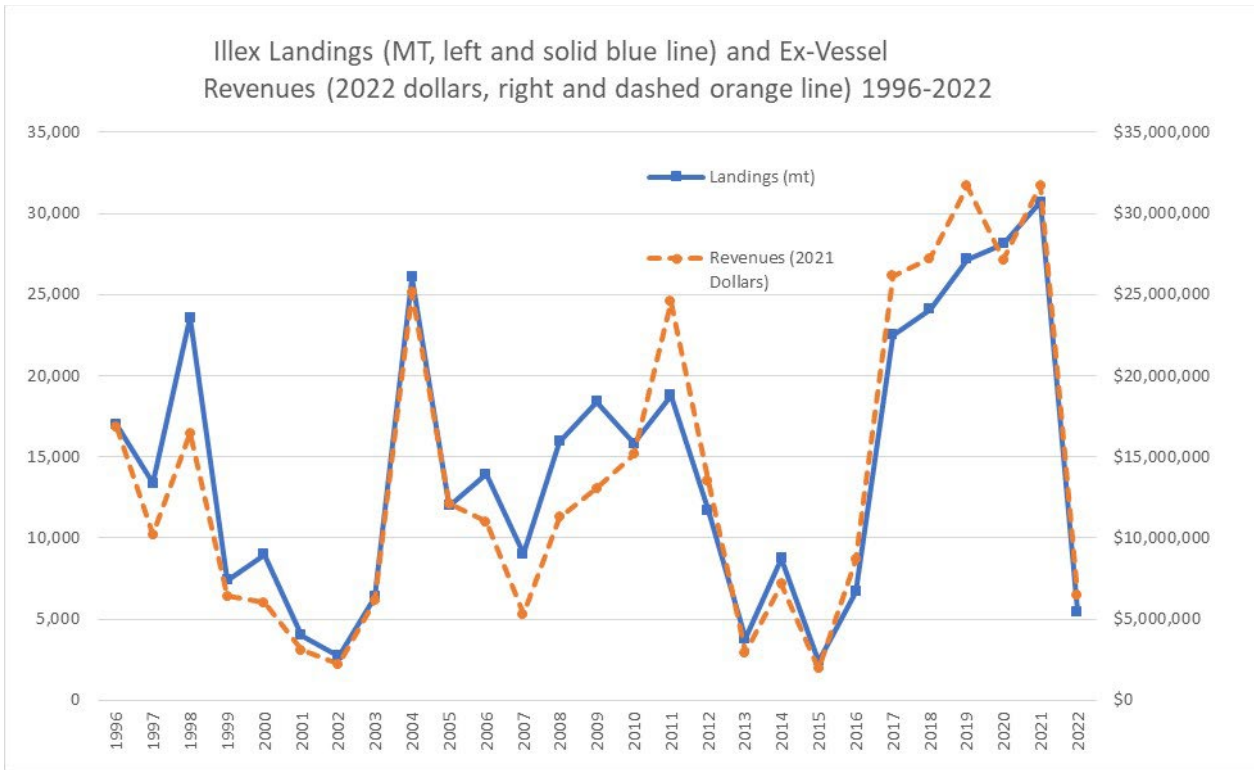


Figure 6. U.S. Illex Landings and Ex-Vessel Values 1996-2021. Source: NMFS unpublished dealer data.

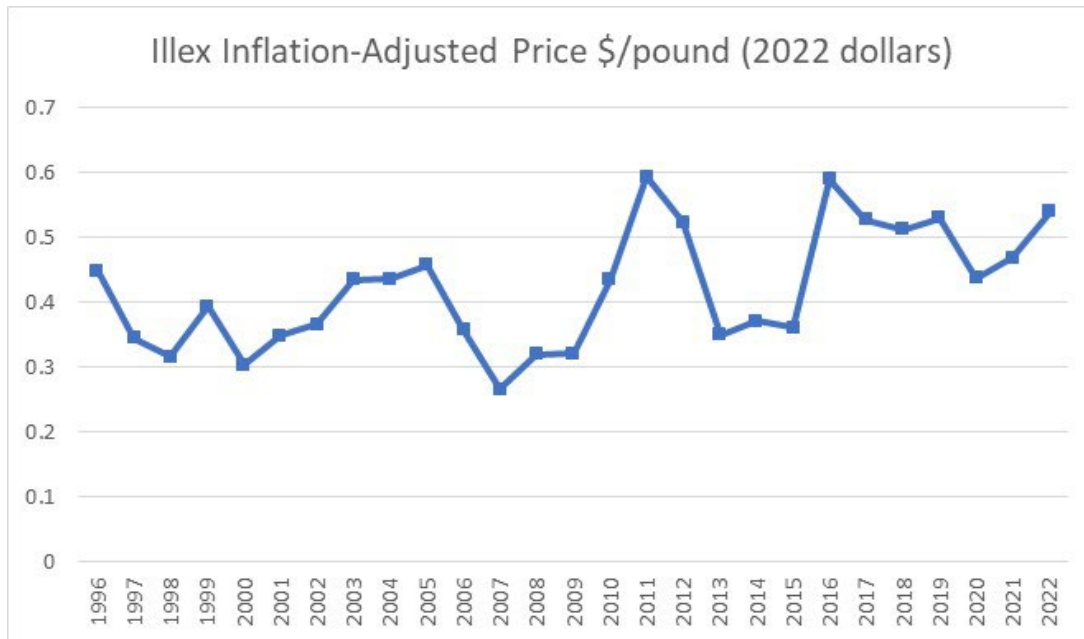


Figure 7. Ex-Vessel Illex Prices 1996-2021 Adjusted to 2021 Dollars Source: NMFS unpublished dealer data.

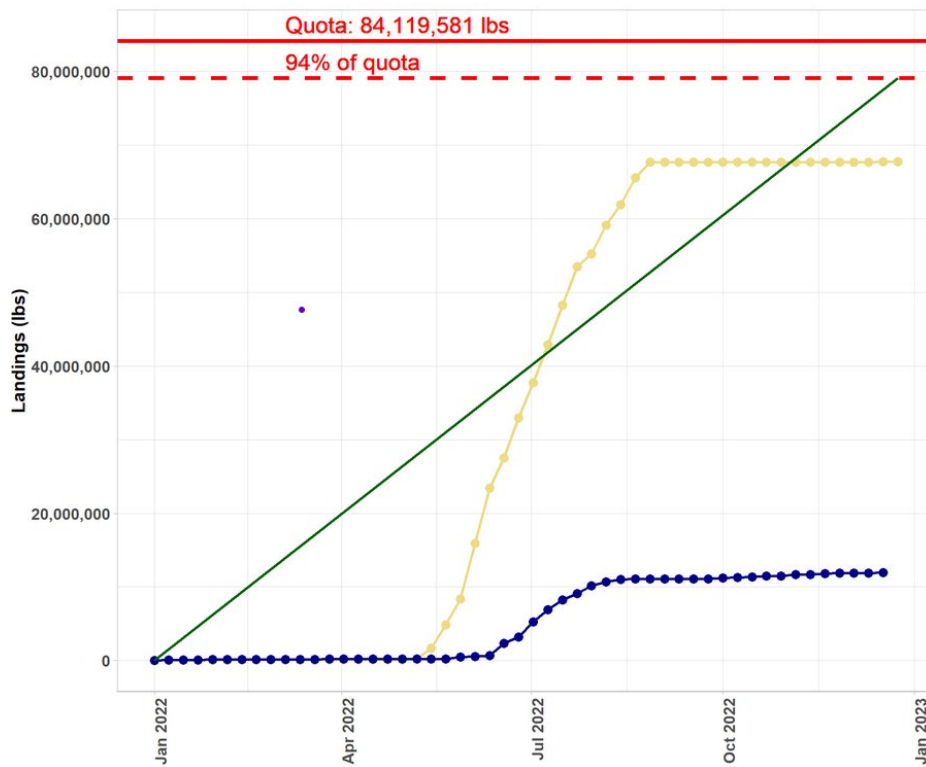


Figure 8. U.S. Preliminary Illex landings; 2022 in dark blue, 2021 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region> (Preliminary 2022 landings totaled 5,410 MT or 11.9 million pounds.)

Table 4. Commercial Illex landings by statistical area in 2022. Source: NMFS unpublished VTR data.

Stat Area	MT
537	94
616	347
622	3,198
623	421
626	859
632	323
Other	168
Total	5,410

Table 5. Vessel participation over time in the Illex Fishery based on annual landings (pounds)

YEAR	Vessels landing more than 50,000 pounds in year
1982	14
1983	16
1984	23
1985	12
1986	18
1987	19
1988	7
1989	14
1990	15
1991	14
1992	17
1993	23
1994	33
1995	31
1996	35
1997	24
1998	30
1999	17
2000	14
2001	8
2002	6
2003	12
2004	30
2005	22
2006	18
2007	11
2008	17
2009	14
2010	18
2011	23
2012	13
2013	12
2014	10
2015	4
2016	10
2017	20
2018	26
2019	32
2020	31
2021	31
2022	13

6.3 Habitat, Including Essential Fish Habitat (EFH)

To be added once alternatives are more defined.

6.4 Protected Species

To be added once alternatives are more defined.

7.0 WHAT ARE THE IMPACTS (Biological and Human Community) FROM THE ALTERNATIVES CONSIDERED IN THIS DOCUMENT?

To be added once alternatives are more defined, but not expected to be significant from a NEPA perspective.

8.0 WHAT LAWS APPLY TO THE ACTIONS CONSIDERED IN THIS DOCUMENT?

To be added once alternatives are more defined.

9.0 LITERATURE CITED AND SELECTED OTHER BACKGROUND DOCUMENTS

To be added once alternatives are more defined.

10.0 LIST OF AGENCIES AND PERSONS CONSULTED

To be added once alternatives are more defined.

11.0 LIST OF PREPARERS AND POINT OF CONTACT

To be added once alternatives are more defined.

THIS IS THE END OF THIS DOCUMENT



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 26, 2023
To: Dr. Chris Moore, Executive Director
From: Brandon Muffley, Council staff
Subject: Update on the Redevelopment of the Research Set-Aside Program

Background

On Thursday, August 10, 2023, the Mid-Atlantic Fishery Management Council (Council) will receive an update on the status of the potential redevelopment of the Council's Research Set-Aside (RSA) program. The Council's RSA program, implemented in 2001, was developed to meet unaddressed research needs for all Council-managed species (except Atlantic Surfclam and Ocean Quahog) and to increase science and industry collaboration to build trust in the science supporting management decisions. As part of the annual specifications process, the Council set aside 0-3% of a species total allowable landings (TAL) and revenue from the sale of that species TAL would be used to fund research projects. From 2002–2014, the RSA program generated approximately \$16 million and supported 39 research projects. However, in 2014 the Council voted to suspend the RSA program (affecting the 2015 projects) due to a number of concerns associated with the program that included administrative, oversight, enforcement, and science issues.

The Council agreed to consider the potential redevelopment of the RSA program in 2020. The Council's Research Steering Committee (RSC) held a series of four workshops¹ in 2021–2022 that explored the key RSA issues of research, funding mechanisms, and enforcement, monitoring, and administration. With input and guidance from the Scientific and Statistical Committee's (SSC) Economic Work Group, the RSC considered the recommendations identified from the workshops and developed a draft framework for a potentially revised RSA program that would seek to address the issues of the original program. In June 2022, the Council reviewed the RSC's draft RSA framework and program elements² and agreed to continue the process of redeveloping the program using the framework developed by the RSC. In making its decision, the Council recognized that a substantial amount of work remained, and additional program details still need

¹ For more information about the RSA workshops including the final reports and workshop materials, please visit:

<https://www.mafmc.org/workshop/rsa>.

² For more information about the Research Steering Committee's draft RSA program framework, including a comparison between the old program and a potentially revised program, please see the 2022 Council meeting materials at: <https://www.mafmc.org/briefing/june-2022>.

to be specified before the Council would make any final decision to restart (or not) the RSA program.

ASMFC and State Engagement

Currently, the RSA program is only specified in the Council's fishery management plans (FMPs). Any program redevelopment and potential management action would need to be developed cooperatively with the Atlantic States Marine Fisheries Commission (ASMFC) for jointly managed species to ensure a consistent and compatible RSA program across FMPs. In addition, and equally important, cooperation and support from state partners would be critical to implement and run any redeveloped RSA program given their significant role in the dockside enforcement, monitoring, and administration (e.g., permitting) of the program. The draft framework developed by the RSC highlighted a number of different areas where a revised program would require state engagement and/or decisions as to how the program would be implemented.

Although ASMFC members and state representatives participated in the exploratory workshops and are members of the RSC, the full ASMFC was not directly involved in reconsidering the RSA program and developing the draft program framework. Given the importance of ASMFC and state partner cooperation, the Council requested feedback from the ASMFC regarding their interest in redeveloping the RSA program and, if so, asked that they provide any potential recommendations for Council consideration.

On July 11, 2023 the ASMFC Interstate Fishery Management Program (ISFMP) Policy Board met via webinar to discuss and make a recommendation on the future of the RSA program. Board members expressed mixed opinions about reinitiating the program and its potential benefits. Some Board members expressed optimism that the draft framework developed by the RSC could address the issues of the old program and create a more efficient and cost-effective process to provide important science for management. Other members expressed concern that any RSA program would result in a significant administrative burden that states cannot absorb and the challenges in the monitoring and enforcement of the for-hire sector participating in the RSA program remain and may never be appropriately addressed. After extensive debate and discussion, the Policy Board passed the following motion regarding the RSA program:

Motion to recommend to the Mid Atlantic Council to consider future RSA programs only for those species that are not jointly managed with the ASMFC. This would preclude RSA programs being conducted for summer flounder, black sea bass, scup, dogfish and bluefish. Motion carries (13 yes, 3 no, 0 null, 1 abstention)

In passing this motion, Board members felt this approach would address their monitoring and enforcement concerns, minimize the impacts on the states, and allow for the Council to continue to redevelop and potentially implement a program for Council-managed fisheries. The Board also noted, if the Council were to implement a revised RSA program, there would be an opportunity to determine if the new program was successful and allow the Policy Board to potentially reconsider its decision in the future.

Future of RSA program

Although the motion passed by the ASMFC Policy Board is a recommendation for Council consideration and not binding on how the Council might move forward, it is a strong indication that the Council should reevaluate continuing the RSA program redevelopment. Without the

support and participation from the ASMFC and state partners, implementing and carrying out a successful RSA program would be extremely challenging and potentially impossible. In addition, an RSA program that does not include jointly managed species, particularly summer flounder and black sea bass, would significantly reduce the amount of funds available to support research (Figure 1). While the future values of Council-managed species may change (both dockside and compensation fishing incentives), it's unclear if enough funds could be generated to support RSA research. However, it is clear that without the revenue raised from jointly managed species, the scope and scale of any future research would be greatly reduced and achieving the updated research goals and objectives for the RSA program would be minimized. In addition, the overall draft RSA framework and certain programs elements developed by the RSC would likely need to be reviewed and revised to account for the different characteristics of the fisheries in the remaining Council-only FMPs (e.g., primarily federal water commercial fisheries). For example, an approach similar to the New England Council RSA program for scallops, monkfish, and Atlantic herring where compensation fishing and research are only associated with each, individual species might be more appropriate.

Given these challenges and the anticipated resources needed to develop a program with limited viability, **staff recommends that we continue the suspension of the RSA program and partner with the ASMFC (and other regional partners) to prioritize cooperative research and identify and pursue appropriate funding sources to address the Council's research needs.**

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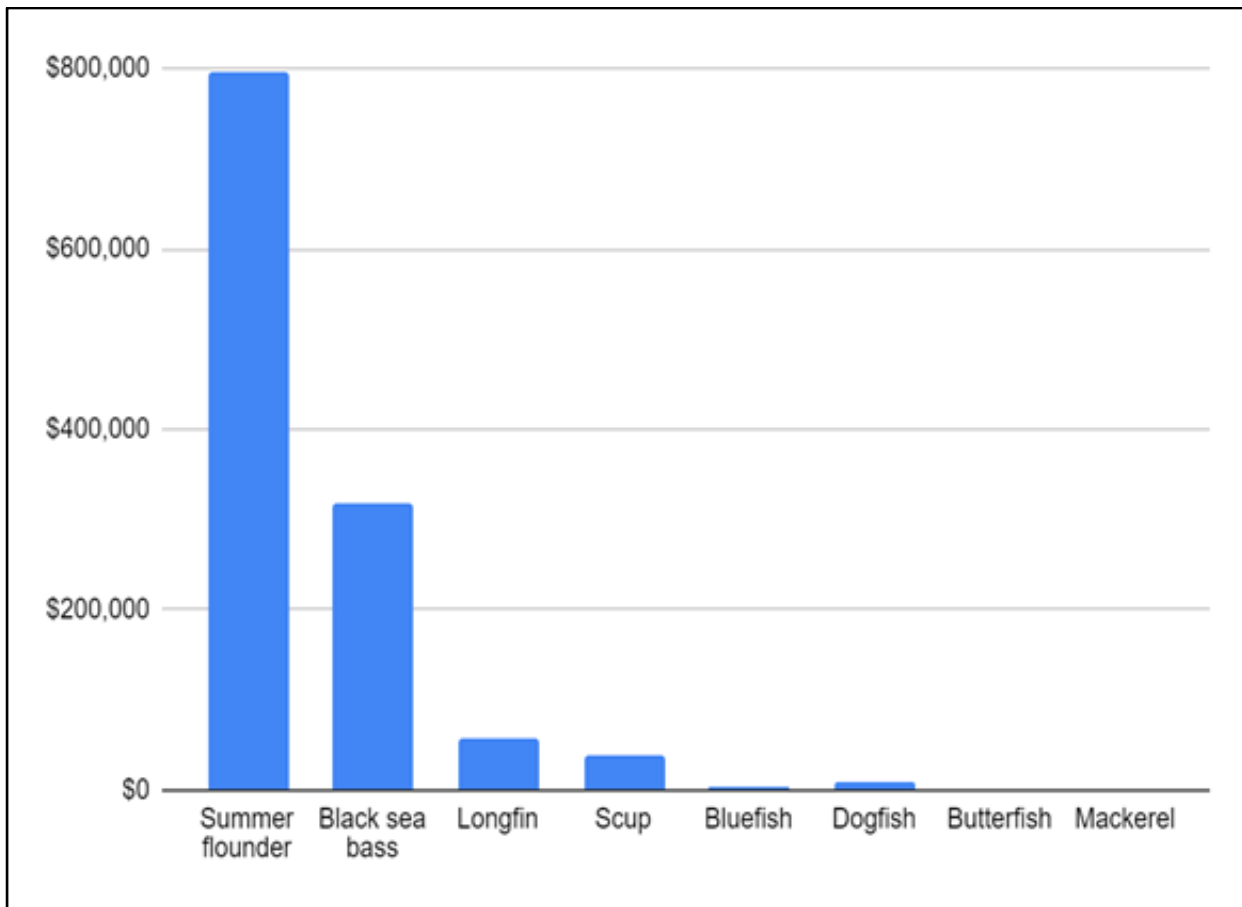


Figure 1. Total revenue generated, by species, from the Mid-Atlantic Council's Research Set-Aside program in 2014 (Figure from R. Silva, GARFO).



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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 27, 2023
To: Council
From: Brandon Muffley, Council staff
Subject: Meeting Materials – Advance Notice of Public Rulemaking:
Guidelines for National Standard 4, 8, and 9

On Thursday, August 10, 2023, the Mid-Atlantic Fishery Management Council (Council) will develop comments in response to the National Marine Fisheries Service (NMFS) Advanced Notice of Public Rulemaking (ANPR) regarding potential future changes to the guidelines for National Standards 4 (allocation), 8 (communities) and 9 (bycatch). The Council will review draft comments developed by staff and provide additional input and direction to be included in a comment letter for NMFS consideration.

Materials listed below are provided for Council consideration of this agenda item.

- Briefing Memo: Draft comments for Council consideration – *to be posted as supplemental material*
- May 9, 2023 Federal Register notice on ANPR request for comments on guideline National Standards 4, 8, and 9

AGENCY:

National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

Start Printed Page 30935

ACTION:

Advance notice of proposed rulemaking (ANPR); request for comments.

SUMMARY:

NMFS is publishing this ANPR to alert the public of potential future adjustments the agency may make to the implementing guidelines for National Standards 4, 8, or 9, of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Several ongoing fishing management challenges, including changes in environmental conditions, shifting distributions of fish stocks, and equity and environmental justice considerations that affect fishing communities that are currently or have been historically dependent on the resource, suggest a need to revisit the guidelines to ensure they remain appropriate for current U.S. fisheries management. The intent of this notice is to provide the public with background on some of the specific issues under consideration, seek specific input, and provide a general opportunity for comment. NMFS will take public comment into consideration when it decides whether or not to propose changes to the guidelines for National Standards 4, 8, or 9.

DATES:

Comments must be received by 5 p.m., local time, on September 12, 2023.

ADDRESSES:

You may submit comments on this document, identified by “NOAA–HQ–2023–0060”, by any one of the following methods:

- *Electronic Submissions:* Submit all electronic public comments via the Federal eRulemaking Portal: www.regulations.gov. To submit comments via the e-Rulemaking Portal, first click the “submit a comment” icon, then enter “NOAA–HQ–2023–0060” in the keyword search. Locate the document you wish to comment on from the resulting list and click on the “Submit a Comment” icon on the right of that line.
- *Mail:* Wendy Morrison; National Marine Fisheries Service, NOAA; 1315 East-West Highway, Room 13436; Silver Spring, MD 20910.

Instructions: Comments must be submitted by one of the above methods to ensure that the comments are received, documented, and considered by NMFS. Comments sent by any other method, to another address or individual, or received after the end of the comment period, may not be considered. All comments received are part of the public record and will generally be posted for public viewing on www.regulations.gov without change. All personal identifying information (e.g., name, address, etc.) submitted voluntarily by the sender will be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information. NMFS will accept anonymous comments (enter “N/A” in the required fields if you wish to remain anonymous).

FOR FURTHER INFORMATION CONTACT:

Wendy Morrison, Fisheries Policy Analyst, National Marine Fisheries Service, 301-427-8564.

SUPPLEMENTARY INFORMATION:

Background

Section 301(a) of the MSA contains 10 national standards for fishery conservation and management. Any fishery management plan (FMP) prepared under the MSA, and any regulation adopted under the MSA to implement any such plan, must be consistent with these national standards.

National Standard 4 (NS4) of the MSA states that conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (a) fair and equitable to all such fishermen; (b) reasonably calculated to promote conservation; and (c) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privilege.

National Standard 8 (NS8) states that conservation and management measures shall, consistent with the conservation requirements of the MSA (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that are consistent with the best scientific information available, in order to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities.

National Standard 9 (NS9) states that conservation and management measures shall, to the extent practicable, (a) minimize bycatch and (b) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

Section 301(b) of the MSA requires that the Secretary of Commerce establish advisory guidelines, based on the national standards, to assist in the development of FMPs. These guidelines do not have the force and effect of law; however, the courts often give deference to the agency's interpretations in the guidelines. Guidelines for National Standards 4, 8, and 9 are codified at [50 CFR 600.325](#) (NS4), [600.345](#) (NS8), and [600.350](#) (NS9). NMFS last revised the NS4 Guidelines on May 1, 1998 ([63 FR 24212](#)), NS8 Guidelines on November 17, 2008 ([73 FR 67809](#)), and NS9 Guidelines on November 17, 2008 ([73 FR 67809](#)).

Since these guidelines were last revised, a number of fishery management challenges, including changes in environmental conditions and shifting distributions of fish stocks, suggest a need to revisit the guidelines to ensure they remain appropriate for current U.S. fisheries management. Recent Executive Orders (E.O.s), such as [E.O. 14008](#) on Tackling the Climate Crisis at Home and Abroad, and [E.O. 13985](#) on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, as well as relevant policy documents (*e.g.*, NOAA fiscal year 2022–2026 Strategic Plan) highlight NMFS' commitment to plan for climate change impacts and to serve stakeholders equitably by engaging underserved communities in the science, conservation, and management of the nation's fisheries, consistent with existing law. NMFS strongly supports the need to further improve adaptability of our management processes in the context of changing environmental conditions and ensure equity and environmental justice (that is, equity applied to environmental laws, policies, and practices) within the fishery management process. As such, NMFS is soliciting input on potential future revisions to the National Standards 4, 8, and 9 Guidelines that would address recent fishery management challenges, bolster climate adaptability, and encourage equity and environmental justice within the fishery management process under the existing provisions of the MSA.

Background on the National Standards

National Standard 4

Allocation of fishing privileges under NS4 guidelines refers to the direct and deliberate distribution of the opportunity to participate in a fishery among user groups or individuals. See [50 CFR 600.325\(c\)\(1\)](#). Decisions regarding the allocation of fishery resources are often controversial and challenging. In general, increases to one group result in decreases to another, leading to allocation decisions being perceived as a “win” for some fishermen or fisheries and a “loss” for others. A 2012 report based on interviews with fishery stakeholders regarding allocation found that the concepts of fairness and equity are complicated and often vary depending on individual circumstances (Lapointe 2012 at <https://media.fisheries.noaa.gov/dam-migration/lapointe-allocation-report.pdf>). This report concluded that many stakeholders will continue to view allocations as unbalanced or unfair unless the outcomes are close to the positions they seek.

In addition to the existing NS4 guidelines, NMFS created an Allocation Policy (available at <https://media.fisheries.noaa.gov/dam-migration/O1-119.pdf>) in 2016 that requires the eight Regional Fishery Management Councils (Councils), and NMFS for Atlantic Highly Migratory Species (HMS), to identify a trigger for all fisheries that contain an allocation. The trigger could be based on time, public input, or an indicator. When a specified trigger is met, the Council or NMFS must assess if a revision to the allocation is needed. However, the Allocation Policy does not require Councils or NMFS to implement any changes to the allocation.

National Standard 8

National Standard 8 requires that an FMP take into account the importance of fishery resources to fishing communities in order to provide for the sustained participation of—and minimize adverse economic impacts on—such communities. However, both NMFS guidance and court precedent establish that minimizing adverse impacts on communities must be considered secondary to the conservation requirements of the MSA. In short, actions meant to address the importance of fishery resources to affected fishing communities must not compromise the achievement of conservation requirements and goals of the FMP. As the current NS8 guidelines clarify: “All other things being equal, where two alternatives achieve similar conservation goals, the alternative that provides the greater potential for sustained participation of such communities and minimizes the adverse economic impacts on such communities would be the preferred alternative.”

National Standard 9

Fishermen sometimes catch, and may discard, species they do not want, cannot sell, or are not allowed to keep, creating what we know as bycatch. Bycatch is a complex, global issue. The MSA defines bycatch as “fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. This term does not include fish released alive under a recreational catch and release fishery management program.” [16 U.S.C. 1802\(2\)](#). It also does not include incidental catch, or non-target catch, that is sold or kept for personal use. The MSA definition of “fish” does not include marine mammals and birds, thus bycatch of these animals is not included under this standard. NS9 requires that bycatch and bycatch mortality (*e.g.*, unobserved mortality due to a direct encounter with fishing vessels and gear) shall be minimized to the extent practicable.

In considering potential revisions to the guidance for these three national standards, NMFS is seeking comment on the following issues, in particular (in no specific order).

Tackling the Climate Crisis

The changing climate and oceans have significant impacts on the nation's valuable marine life and ecosystems, and the many communities and economies that depend on them. Scientists expect environmental changes such as warming oceans, rising sea levels, frequency and intensity of floods and droughts, and ocean acidification to increase with continued shifts in the planet's climate system. Changing ocean conditions are affecting the location and productivity of fish stocks and the fishing industry's interactions with bycatch, protected species, and other ocean users. Some fish stocks are becoming less productive and/or are moving out of range of the fishermen who catch them. These shifts can cause social, economic, and other impacts on fisheries and fishing-dependent communities. As a result, fishing industries and coastal businesses can face significant challenges in preparing for and adapting to these changing conditions. NMFS understands the importance of updating fisheries management to address current and anticipated needs and conditions, including dynamic stock conditions and changing ocean conditions. The issues associated with changing climate conditions that NMFS is requesting comment on in relation to National Standards 4, 8, and 9 are outlined below.

1. *National Standard 4*: Environmental changes are affecting, and will continue to affect, stock distributions and abundances, and have the potential to change the applicability of historical information and current regulations. Most allocations established by the Councils and NMFS are highly complex and supported by extensive analyses. Determinations of many, but not all, of the existing allocations have relied heavily on documented catch or landings during specific time periods. Considering documented catch in the development of allocations is important to help participants maintain access to resources they have been dependent upon, and to document compliance with statutory requirements. However, it is also important to consider the needs of other users, such as new fishermen who would like to enter a fishery, fishermen displaced from other fisheries, and/or existing fishermen who are catching new species in their historical fishing grounds.

NMFS is considering whether updates to the NS4 guidelines would help encourage allocation decisions that balance the needs of different user groups when creating and updating allocations, including for stocks that are shifting, or have shifted, their distribution. NMFS welcomes specific input on:

- (a) Approaches, consistent with other statutory requirements, for balancing consideration of anticipated or realized changes in stock distributions and/or overall fishery access for historical users, marginalized individuals who may have been inequitably excluded from historical allocations, and new users in such allocation decisions;
- (b) Whether revisions to the NS4 guidelines are needed to reinforce NMFS' Allocation Policy's requirement to complete periodic reviews of allocations; and
- (c) The types of documentation, analyses, and alternative approaches (*e.g.*, spatial allocations between sectors or gears, mixes of historic use and dynamic allocation schemes) that should be considered when making such allocation decisions.

2. *National Standard 8*: Environmental changes are affecting, and will continue to affect, stock distributions and abundances, creating challenges for communities dependent on those resources. NMFS is requesting comments on options for updating the guidelines to NS8 to better account for these changes and to improve the ability of communities to adapt to these changing conditions.

3. *National Standard 9*: Environmental changes are affecting, and will continue to affect, the distributions of many marine resources, including target fish stocks, bycatch fish stocks and protected resources. This has and will continue to create challenges to maintaining economic viability of fisheries while also ensuring sustainable management of all marine resources. NMFS is requesting comments on options for updating the guidelines to NS9 to better account for and adapt to these changes.

Equity and Environmental Justice

NMFS is committed to advancing equity and environmental justice, including equal treatment, opportunities, and environmental benefits for all people and communities, while building on continuing efforts and partnerships with underserved and underrepresented communities. For purposes of this document, consistent with [E.O. 13985](#), “underserved communities” refers to “populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civil life.” The issues associated with equity and environmental justice that NMFS is requesting comment on are outlined below.

1. *National Standard 4*: The existing NS4 guidelines provide limited guidance on what is meant by “fair” and “equitable”, in order to allow Councils and NMFS the flexibility to interpret these terms as needed within their circumstances given the variability in fisheries across the country. NMFS asserts it would be difficult to provide additional guidance on these terms that will be appropriate across the variety of social, economic, and ecological conditions of the eight Councils and Atlantic HMS.

NMFS requests specific input on:

(a) Approaches to improve consideration of underserved communities, previously excluded entrants, and new entrants in allocation decisions; and

(b) The types of documentation and analyses that should be considered to ensure such allocation decisions are fair and equitable. Commenters on this issue should bear in mind the requirements of MSA sections 303(b)(6) and 303A(c)(3)(B), (c)(4)(C), and (c)(5) that require consideration of current and past participation as well as other considerations when developing limited entry programs, Limited Access Privilege Programs (LAPPs), and initial allocations for LAPPs.

2. *National Standard 8*: NMFS is committed to serving stakeholders equitably by engaging underserved communities in the science, conservation, and management of the nation's fisheries. NMFS does not believe that the existing NS8 guidelines limit NMFS' or the Councils' ability to implement regulations and policies that address inequities or barriers to access for underserved communities. However, NMFS is considering removing language in the NS8 guidelines that states that NS8 “does not constitute a basis for allocating resources to a specific fishing community nor for providing preferential treatment based on residence in a fishing community.” This text may be unnecessary and confusing, given that NS8 does not specifically authorize, or prohibit, allocations to fishing communities. NMFS recognizes that allocations to a specific fishing community may be beneficial in some situations, if supported with appropriate rationale, and if NS8 is not the sole basis for making such allocations.

NMFS is also considering revising the definition of fishing community within the guidelines. The MSA defines a fishing community as “a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United

States fish processors that are based in such communities.” 16 U.S.C. 1802(17). The current NS8 guidelines add to the statutory definition by stating a fishing community is “a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent services and industries (for example, boatyards, ice suppliers, tackle shops).” 50 CFR 600.345(b)(3). Given the wide range of fishing community structures (including locations of fishing infrastructure and fishing-related economic activity) associated across the U.S. and its territories, NMFS is considering removing or revisiting the requirement for members to reside in a specific location. In addition, NMFS is also considering adjusting how the “fishing community” definition under the NS8 guidelines balances between dependency and engagement. As stocks decrease in abundance or shift distributions, communities will likely need to adapt. One option could be for a community to increase their resilience by decreasing their dependence on one or more particular stocks or fisheries (*i.e.*, diversifying the fisheries that can be accessed). Thus, NMFS is considering revising the definition to shift from focusing on “dependence” to focusing on “engagement,” as both are included within the MSA definition. Shifting the focus of the definition of “fishing community” towards “engagement” could help provide that those communities that undertake engagement efforts that build up the community's economic resilience, while still being engaged with fisheries, could continue to be considered a “fishing community” under the NS8 guidelines. NMFS requests input on the definition of “fishing community” within the NS8 guidelines, including the use of “current and historical engagement” instead of or in addition to “dependence”.

Finally, NMFS welcomes suggestions on how to appropriately balance the requirement under NS8 for “sustained participation” of fishing communities and the need to improve consideration of (1) underserved communities currently or historically engaged with fisheries, (2) previously excluded entrants, (3) new entrants, and (4) communities with high levels of social or climate vulnerability. NMFS also welcomes input on appropriate measures of social and climate vulnerability for fishing communities.

3. *National Standard 9*: Conflict between fisheries and gears is common in fisheries management, via overlap in geographic areas fished or species caught. Relevant to NS9 is the situation where bycatch in one fishery has negative impacts on another fishery, usually via a restricting limit on total fishing mortality for a shared stock. For example, bycatch of one species in a fishery may reduce the amount of that species available to harvest in a target commercial fishery, recreational fishery, or subsistence fishery. The issue can be further complicated when one or more fisheries in conflict are important for underserved communities. NMFS welcomes input on how the NS9 guidelines could be modified to minimize bycatch mortality in a manner that is equitable across different fisheries and gear types. NMFS also welcomes comments on ways to better balance the needs of bycatch and target fisheries in a manner that is equitable across different fisheries and gear types, especially when one or more fisheries are important for underserved communities.

Other Relevant Management Challenges

There are other fisheries and management issues relevant to National Standards 4, 8 and 9 that are not covered above. NMFS is requesting comment on two of these issues in particular, as described below.

1. *Practicability Standard*: NS9 requires bycatch and bycatch mortality be minimized “to the extent practicable”. NMFS asserts the discussion of practicability within the existing NS9 guidelines appropriately balances the various complexities of federal fisheries management. NMFS welcomes input on how the NS9 guidelines could be modified to further decrease bycatch or bycatch mortality of stocks. NMFS also welcomes input on other ways to improve the guidelines. For example,

NMFS welcomes input on whether the agency should consider: (1) adding provisions to address bycatch on an ecosystem level (as opposed to single species metrics), (2) implementing provisions for alternative performance-based standards, or (3) increasing provisions to document bycatch avoidance.

2. *Reducing Waste*: Some FMPs include management measures that prohibit retention of certain fish species or sizes to ensure fishermen are dis-incentivized from incidentally catching these fish. When these regulatory discards are required, they can lead to significant waste as fishermen are forced to discard (waste) usable catch. NMFS seeks input on revisions to the NS9 guidelines that could encourage provisions to incentivize reduction of waste, including use of innovations that decrease bycatch (*e.g.*, gear innovations or adjustable area closures that avoid certain species or sizes of fish), decrease bycatch mortality (*e.g.*, gear innovations that improve the health and survival of discards), or increase use while dis-incentivizing catch of overfished or low productivity stocks (*e.g.*, allowing a fishery to retain and sell what would otherwise be required to be discarded either through purchasing quota share or other types of compensation; or allowing bycatch to be donated to food shelters so that it is not wasted but also does not lead to economic gains).

NMFS also acknowledges that other relevant management issues have arisen in litigation over the past years in addition to those discussed above. The agency will consider these issues when deciding whether to propose revisions to the NS4, 8, or 9 guidelines, but is not soliciting comment on them here.

Public Comment

NMFS is soliciting comments on the issues and concepts outlined in this ANPR. NMFS invites comments to help determine the scope of issues to potentially be addressed in a subsequent revision to the National Standard guidelines for NS 4, 8, or 9 and to identify significant issues related to these national standards. NMFS is also seeking additional ideas to ensure that the National Standard 4, 8, and 9 guidelines remain relevant given current and emerging issues facing U.S. fisheries management. All written comments received by the due date will be considered in evaluating whether revisions to the guidelines or related policy documents are warranted. Additionally, NMFS has requested to present this ANPR to the various Regional Fishery Management Councils and the Atlantic HMS Advisory Panel during the public comment period. Please see the appropriate meeting notices on the Councils' and Atlantic HMS Advisory Panel's website for specific date and times. General meeting information is available below.

Atlantic HMS Advisory Panel May 9–11, 2023, <https://www.fisheries.noaa.gov/event/may-2023-hms-advisory-panel-meeting>.

Caribbean Fishery Management Council August 15–16, 2023, <https://www.caribbeanfmc.com/meeting-documents/2-uncategorised/426-august-15-16-2023>.

Gulf of Mexico Fishery Management Council June 5–8, 2023, <https://gulfcouncil.org/meetings/council/>.

Mid-Atlantic Fishery Management Council June 6–8, 2023, <https://www.mafmc.org/council-events/2023/june-council-meeting>.

New England Fishery Management Council June 27–29, <https://www.nefmc.org/calendar/june-2023-council-meeting>.

North Pacific Fishery Management Council June 8–11, 2023, <https://meetings.npfmc.org/Meeting/Details/2993>.

Pacific Fishery Management Council June 20–27, 2023, https://www.pcouncil.org/council_meeting/june-2023-council-meeting/.

South Atlantic Fishery Management Council June 12–16, <https://safmc.net/events/june-2023-council-meeting/>.

Western Pacific Fishery Management Council June 26–30, 2023, <https://www.wpcouncil.org/public-meetings/>.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: May 9, 2023.

Samuel D. Rauch, III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

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MEMORANDUM

Date: July 28, 2023
To: Michael P. Luisi, Chairman, MAFMC
From: Paul J. Rago, Ph.D., Chair, MAFMC Scientific and Statistical Committee (SSC)
Subject: Executive Summary Report of the July 2023 SSC Meeting

Executive Summary

Background

The SSC met in person in Philadelphia, PA and via webinar from 24th - 26th of July 2023, to develop ABC recommendations for Bluefish, Black Sea Bass, Scup, Summer Flounder, Longfin Squid, and Atlantic Mackerel. In addition, we provided comments on the National Standard 1 (NS1) Technical Guidance Memo, and the draft NMFS Climate Governance Policy. Our review of the Governance Policy was developed at a webinar meeting on July 12, 2023 and will be provided separately. A summary of the ABC recommendations by the SSC is provided below (Table 1).

Bluefish

Results of a Level 2 Management Track Assessment were presented by Anthony Wood, NEFSC; a summary of recent management activities, feedback from the Advisory Panel, and a staff recommendation for an ABC were presented by Karson Cisneros, MAFMC. Cynthia Jones, SSC, led the review of the OFL CV determination and response to the Terms of Reference.

The SSC acknowledged the significant improvements in the assessment following the Research Track Assessment. Significant advances included changes to natural mortality rates, more sophisticated methods for deriving CPUE from MRIP data, and reductions in retrospective patterns. The current spawning stock biomass estimate of 52,747 mt is 60% of the Bmsy proxy value of 88,131 mt; the current fishing mortality rate estimate of $F=0.152$ is 64% of the Fmsy proxy of 0.239. Following review and discussion, the SSC set most appropriate estimate of the

OFL CV = 100%. Applying the Council's risk policy, the SSC recommended ABCs of 7,929 mt in 2024 and 9,903 mt in 2025.

Black Sea Bass

The SSC reviewed previous catch recommendations specified in 2022 for 2023. Updated data and fishery information, feedback from the Advisory Panel, and a staff recommendation for a 2024 ABC were presented by Julia Beaty, MAFMC. Olaf Jensen, SSC, led the SSC responses to the Terms of Reference. Based on the 2021 MTA, the spawning stock biomass estimate was 29,769 mt, which was 210% of the Bmsy proxy value of 14,441 mt; the current fishing mortality rate estimate of $F=0.39$ is 85% of the Fmsy proxy of 0.46. The exceptional 2011 and very strong 2015 year classes are no longer dominating fishery removals as they approach the maximum age for this species. Stock biomass is expected to decline as the population becomes more reliant on recent average recruitments.

The SSC noted the difficulties of forecasting harvests and discards in the recreational fishery. Subsequent discussions related to retrospective adjustments and the current downward trajectory of the stock revealed a need for criteria for interim measures that could be applied to all stocks during interim reviews of ABCs. In this regard, greater specificity is needed on relevant statistical methods and decision criteria to be applied, and the potential magnitude of admissible ABC adjustments. **Despite the concern over the expected decline in SSB and taking into account that current SSC is twice the size of SSBmsy and F is below Fmsy, the SSC recommended setting the 2024 ABC equal to the 2023 ABC of 7,557 mt.**

Scup

Results of a Level 2 Management Track Assessment were presented by Mark Terceiro, NEFSC; a summary of recent management activities, feedback from the Advisory Panel, and a staff recommendation for an ABC were presented by Hannah Hart, MAFMC. John Boreman, SSC, led the review of the OFL CV determination and responses to the Terms of Reference. The current spawning stock biomass estimate of 193,087 mt is 246% of the Bmsy proxy value of 78,593 mt; the current fishing mortality rate estimate of $F=0.098$ is 52% of the Fmsy proxy of 0.19.

The SSC noted the dome-shaped pattern of fishery selectivity and increases in retrospective patterns that are causes of concern. Following extensive discussion, the SSC increased the OFL CV estimate from the previous value of 60% to 100% for the 2024-2025 specifications to reflect these concerns. **The SSC recommended ABCs of 19,876 mt in 2024 and 18,028 mt in 2025.**

Summer Flounder

Results of a Level 2 Management Track Assessment were presented by Mark Terceiro, NEFSC; a summary of recent management activities, feedback from the Advisory Panel, and a staff recommendation for an ABC were presented by Kiley Dancy, MAFMC. Michael Wilberg, SSC, led the review of the OFL CV determination and response to the Terms of Reference.

The spawning stock biomass estimate in 2022 of 40,994 mt is 83% of the Bmsy proxy value of 49,561 mt; the fishing mortality rate estimate in 2022 of $F=0.464$ is 103% of the Fmsy proxy of 0.451. Overfishing is occurring but its magnitude is small. Summer Flounder is one of the most exhaustively reviewed stocks in the Northeast and assessment models with substantially different structures and assumptions have been applied. The current model performs extraordinarily well and has a nominal retrospective pattern. Following this discussion, the most appropriate estimate of the OFL CV was set to 60%.

Recent recruitment has been below average and projections were based on recruit estimates in the last 12 years. **The SSC recommended ABCs of 8,111 mt in 2024 and 9,411 mt in 2025, respectively. If the Council should prefer to adopt a constant average ABC policy, an ABC of 8,761 mt for 2024 and 2025 would satisfy the Council's risk policy.**

Longfin Squid

Results of a Level 2 Management Track Assessment were presented by Lisa Hendrickson, NEFSC; a summary of recent management activities, feedback from the Advisory Panel, and a staff recommendation for an ABC were presented by Jason Didden, MAFMC. Michael Frisk, SSC, led the review of the OFL CV determination and responses to the Terms of Reference. The SSC noted the differences in relative abundance estimates between the spring and fall NEFSC bottom trawl surveys. Coupled with known differences in seasonal growth rates, scale differences between surveys may be indicative of productivity differences between seasons.

Efforts to develop an analytical stock assessment model have not been successful; hence it is not possible to specify stock status or derive an OFL. Given the lack of trend in swept area biomass estimates and stability in catches over recent decades, and the efficacy of management measures to distribute fishing effort seasonally and spatially, SSC recommended continuation of recent ABCs for another three years. **The SSC recommended ABCs of 23,400 mt each year for 2024, 2025 and 2026.** The SSC looks forward to the results of the Research Track Assessment in 2026 and its application for determination of future ABCs.

Atlantic Mackerel

Results of a Level 1 Management Track Assessment were presented by Kiersten Curti NEFSC; a summary of recent management activities, feedback from the Advisory Panel, and staff recommendation for an ABC were presented by Jason Didden, MAFMC. David Secor, SSC, led the responses to the Terms of Reference.

SSC deliberations focused on the limited recovery of stock biomass since the inception of the rebuilding program. The SSC noted that elimination of overfishing in the Management Track Assessment was expected given low catches, but the lack of rebuilding in stock size was unexpected. Moreover, apparent overestimation of recent incoming year classes suggests stock biomass will decline further. Information from the February 2023 Fisheries and Oceans Canada (DFO) assessment of the northern contingent of Atlantic Mackerel has led to a closure of Canadian commercial fisheries. **In view of these considerations, the SSC recommended ABCs of 2,726 mt and 3,900 mt in 2024 and 2025, respectively.** These recommendations are

based on the results of a sensitivity analysis provided by the NEFSC that included a downward adjustment of estimated recruitment in 2022 to the time series median. This change, along with the updated estimates of stock size in 2022, results in a reduction of Frebuild from $F=0.11$ to $F=0.07$. Given our current understanding of stock condition, this level of Frebuild is expected to have a 61% chance of rebuilding by 2032. The SSC expressed low confidence in this forecast. It also noted that clarification of NMFS policy on the definition of overfishing during rebuilding is necessary.

Comments on NS1 Guidance on Reference Points and Status Determination

Richard Methot, NMFS, Headquarters, presented a comprehensive overview of newly revised NS1 guidance on methods for estimating reference points and defining status determination. Considerable progress has been made since this guidance document was originally developed in 1998. Improvements in methods for Data Limited Stocks have been substantial. The report also highlighted the need for dynamic reference points that are responsive to changing environmental conditions. Such approaches must distinguish effects due to low stock size from longer-term changes in productivity. This report and results of ongoing national and international research will be valuable to the SSC as it develops future ABC recommendations.

Comments on NMFS Draft Climate Governance Policy

The SSC acknowledged the importance of addressing the consequences of changes in spatial distribution of species in response to climate change and applauded the NMFS efforts to address these changes comprehensively. However, the current document and recommendations (stated to be non-binding) are insufficient to support the proposed changes to management jurisdictions. General patterns of species movements are well described, but quantification of the fraction of stocks in subareas is not yet adequate for management. A similar concern was expressed about the need to distinguish short-term from long-term changes in distributions. Economic criteria for shifting patterns of landings are similarly difficult to distinguish responses to distributional shifts from other economic and management factors. Finally, the SSC expressed concerns about increased workloads that would be required to support implementation of this policy. Such increases would be borne by the Councils, State partners, Science Centers, and Regional Offices.

Table 1. Summary of the catch limit recommendations, in metric tons, made by the Mid-Atlantic SSC during their July 24-26, 2023 meeting. For summer flounder, the first set of recommendations are associated with an annual/varying ABC approach, and the second set of recommendations are associated with a constant/average ABC approach. OFL – Overfishing Limit; ABC – Acceptable Biological Catch; OFL CV – Overfishing Limit Coefficient of Variation.

Species	Year	OFL	ABC	OFL CV
Bluefish	2024	11,734	7,929	100%
	2025	12,467	9,903	
Black Sea Bass	2024	NA	7,557	NA
Scup	2024	20,295	19,876	100%
	2025	18,408	18,028	
Summer Flounder (annual ABC)	2024	10,422	8,111	60%
	2025	11,515	9,411	
Summer Flounder (constant ABC)	2024	10,422	8,761	60%
	2025	11,325	8,761	
Longfin Squid	2024	NA	23,400	NA
	2025	NA	23,400	NA
	2026	NA	23,400	NA
Atlantic Mackerel	2024	NA	2,726	NA
	2025	NA	3,900	NA



Ecosystem and Ocean Planning Committee and Advisory Panel Meeting

Meeting Summary

July 7, 2023

The Mid-Atlantic Fishery Management Council's (Council) Ecosystem and Ocean Planning (EOP) Committee and Advisory Panel (AP) met jointly on Friday, July 7th from 10:00 a.m. to 3:30 p.m. The EOP Committee and AP continued their comprehensive review of the Council's Ecosystem Approach to Fisheries Management (EAFM) risk assessment. The group reviewed previous Committee and AP feedback on existing and potentially new risk elements and their definitions in order to refine the list of risk elements for possible inclusion in an updated risk assessment. The Committee and AP also provided input on the indicators that will be used to measure and track each risk element.

EOP Committee Attendees: M. Duval (Committee Chair), A. Nowalsky, S. Winslow (Committee Vice-Chair), T. Schlichter, E. Keiley, J. Cimino, P. Geer

EOP Advisory Panel Attendees: J. Deem, J. Firestone, F. Hogan, M. Lapp, C. LoBue, E. Bochenek, J. Kaelin, P. Himchak, W. Goldsmith, B. Brady, J. Weis

Other Attendees: S. Gaichas, G. DePiper, B. Muffley, G. DiDomenico, M. Waine

The meeting started with a review of the different components of the EAFM risk assessment (i.e., risk elements, definitions, indicators, and ranking criteria) and how the risk assessment has been used within the Council's ecosystem decision process. An overview of the pre-meeting feedback provided by the Committee and AP was also presented.

Prior to the meeting, Committee and AP members were sent a [Google Form](#) where participants were asked to review all (24 existing and 19 potentially new) risk element/definition combinations developed from previous input from the Committee and AP and select their preferred risk element option. Based on this feedback, a broad objective, the top definitions, a proposed definition, and a list of potential indicators were developed for each risk element. This information was the focus of Committee and AP discussion for feedback and continued development.

Below is a summary of the broader Committee and AP discussion and general recommendations (note: feedback on every risk element is not included).

Review of Ecological Elements:

- Agreement to retain the **Stock Assessment Performance, Fishing Mortality Status, and Stock Biomass Status** risk elements as they are currently considered. However, the group recommended updating relevant language referencing optimum yield (OY) and clarifying that maximum sustainable yield (MSY), or proxy, and associated targets and limits are more appropriate/accurate representation of these elements.
- The current risk assessment includes three different **Food Web** related risk elements (**Council Managed Predators, Council Managed Prey, and Protected Species Prey**) and the Committee and AP are also considering two additional Food Web related elements (**HMS and Seabird Interactions and Forage Base**).
 - Given the range of considerations and overlap across many of these different food web elements, the group discussed options to modify and/or combine different elements to ensure the elements are considering priority food web interactions while also being informative and utilizing data that can be tracked and evaluated over time.
 - The group suggested the following direction for the Food Web risk element(s) development:
 - Maintain the **Council Managed Predators** risk element but include a broader consideration of prey availability and not just focused on Council managed or Mid-Atlantic only prey.
 - Similarly, maintain the **Council Managed Prey** risk element but consider predators throughout the ecosystem and both Council managed and non-managed species.
 - Given these expanded definitions and broader considerations associated with these two risk elements, conducting a review the available data and a potential range of indicators (existing and new) should be done to determine if other food web interests (e.g., HMS predation and forage base function) might be appropriately accounted for within these two risk elements.
- For the **Ecosystem Productivity** risk element, the group identified additional/alternative indicators (e.g., deviations from historical norms/baseline) and expressed potential interest in modifying the scale (e.g., at the ecosystem or species level) used to evaluate this risk element.
- The group requested additional refinement to the definition(s) and potential indicator information/analysis for both the **Population Diversity** and **Ecological Diversity** risk elements. The group can then decide whether these elements could be combined, dropped, or considered within other risk elements (e.g., Ecosystem Productivity).
- The current risk assessment includes a **Climate** risk element that considers risks to species productivity due to projected climate change. The group supported retaining this risk element but with the inclusion of Ocean Acidification as part of the definition.
 - As part of this discussion, the group also supported the development of a potentially new risk element as part of the Management Elements that would consider missed harvest or emerging species opportunities due to climate change.
- The group supported the **Distribution Shift, Estuarine and Coastal Habitat, and Offshore Habitat** risk elements with some slight definition modifications. The Committee and AP also identified potential data sources and areas for continued development of possible indicators.
- The group recommended keeping the **Invasive Species** risk element for now, but suggested further exploration of the potential impacts, both positive and negative, and if risks might be captured in other elements.

Review of Socio-economic Elements:

- There was agreement to continue to retain the **Commercial Revenue** and **Marine Recreational Angler Days/Trips** risk elements as currently considered.
- There are a number of current and potentially new **Commercial Fishery Resilience** risk elements being considered (**Revenue Diversity, Capital, Insurance Availability, Emerging Markets/Opportunities, and Shoreside Support**). These elements consider the risk of reduced commercial fishery business resilience from a variety of factors.
 - The group supported combining a number of risk elements into a more comprehensive element that would include a number of relevant indicators that could be refined and updated in the future. Also, fewer commercial fishery resilience risk elements can reduce the potential for conflicting information across elements. There was some discussion about dropping some elements, but the group ultimately decided to retain the different commercial resilience elements until the next meeting and determine how best to handle the different elements and information.
- The EOP has also been considering similar resilience risk elements for the recreational fishery. **Recreational Fishery Resilience – Shoreside Support** is one potentially new risk element; however, the group felt, as currently developed, was insufficient to capture the risks across the range and diversity of recreational shoreside businesses. New/different indicators and data considerations were provided for further development. It was noted that data availability, particularly at some the scale and scope the EOP may be interested in including, may limit the type of indicators that could be developed.
- **Recreational Fleet Diversity** is another new risk element being considered by the EOP. The group was supportive of this risk element/definition and suggested some additional indicators to be considered (e.g., ratio of harvest to catch by mode) that might provide insight on any trends in how the fishery is operating (i.e., harvest versus catch and release).
- The Committee and AP suggested the **Community Vulnerability** risk element should be broad in its considerations and explore new/additional social and equity and environmental justice (EEJ) indicators that are available from the State of the Ecosystem report.
- The group supported expanding the **Commercial Seafood Production** risk element to include bait/non-consumptive landings (tracked separately). For **Recreational Seafood Production**, the group recommended the broad objective and definition be refined with greater detail and specificity. Alternative indicators (e.g., percent of seafood consumed or recreational price index) for further consideration and development were also identified.
- **Commercial and Recreational Employment** are potentially new risk elements and the group was generally supportive of retaining, for now, some version of these risk elements but felt additional refinement and re-focus of the broad objective and definition is needed. The scope and types of indicators available will be dependent on an updated and refined definition.

Management Elements:

- The group reviewed **Fishing Mortality Control** and **Technical Interactions** risk elements and, outside of some minor language tweaks, supported the suggested definition and indicators.

- Due to time constraints and the importance and interest in the remaining risk elements, particularly those related to **Other Ocean Uses** and **Offshore Wind**, it was decided not to continue the review of the remaining 10 risk elements.

Next Steps:

- The EOP Committee and AP will be meeting on Tuesday, August 22nd from 9:00 – 11:00 via webinar to finish the review and offer feedback on the 10 remaining Management risk elements.
- Staff will take the EOP feedback and update the list of potential risk elements, revise the definitions, review available information and update indicators, and develop draft risk ranking criteria for Committee and AP review.
- The EOP Committee and AP will then hold an in-person/webinar meeting in Baltimore, MD on September 13th – 14th.
- Recommended updates and revisions to the risk assessment will be presented to the Council for consideration at their October 3-5, 2023 meeting.



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 27, 2023

To: Chris Moore, Executive Director

From: Hannah Hart, Staff

Subject: Draft Comments for the NOAA Highly Migratory Species Amendment 15, Advance Notice for Proposed Rulemaking: Electronic Reporting, and Amendment 16

The Council's Highly Migratory Species (HMS) Committee met on July 11, 2023, to review and provide comments on multiple NOAA HMS management initiatives. These initiatives include the proposed rule for [Amendment 15](#) (spatial management and electronic monitoring), an [Advance Notice of Proposed Rulemaking on Electronic Reporting](#), and scoping for [Amendment 16](#) (shark management issues). Attached is a summary of the Committee's discussion and recommended comments. The Committee is requesting Council endorsement on the recommended comments which would then be put into a comment letter and submitted to NOAA HMS leadership prior to the public comment deadline.



Highly Migratory Species (HMS) Committee
Webinar Meeting
July 11, 2023
Meeting Summary

Committee Attendees: Dewey Hemilright, Scott Lenox, Skip Feller, Paul Risi, David Stormer, and Sonny Gwin.

Additional Attendees: Hannah Hart, Greg DiDomenico, Meghan Lapp, Alan Bianchi, Will Polston.

The HMS Committee met via webinar on Tuesday, July 11, 2023 to review and provide comments on three NOAA HMS management initiatives. These management initiatives include the proposed rule for Amendment 15 (spatial management and electronic monitoring), an Advance Notice of Proposed Rulemaking on Electronic Reporting Requirements, and scoping for Amendment 16 (shark management issues).

Committee Discussion and Recommended Comments

Amendment 15

The proposed rule has two broad components: (1) Modification, data collection, and assessment of four commercial longline spatial management areas; and (2) Modification of the administration and funding of the HMS pelagic longline electronic monitoring program. The four commercial longline spatial management areas (the Mid-Atlantic Shark, Charleston Bump, East Florida Coast, and DeSoto Canyon closed areas) currently prohibit commercial bottom or pelagic longline fishing during all or portions of the year. The proposed measures would modify the areas and allow data collection to help assess their efficacy. The proposed rule also includes modifications to the administration and funding of the HMS pelagic longline electronic monitoring program, including considerations of transitioning sampling costs from the Agency to industry. The public comment period for Amendment 15 closes on September 15, 2023.

Spatial Management – NOAA HMS Preferred Alternative A1d, B1, C2, and C4

The first component of Amendment 15 considers modification, data collection, and analysis of four current spatial management areas that restrict or prohibit commercial fishing. The Committee reviewed the NOAA HMS preferred alternative package for the Mid-Atlantic shark closed area, where the use of bottom longline gear is currently prohibited, with the exception of data collection. This package would extend the eastern boundary of the current closed area and shift the timing of the closure from January 1 – July 31 to November 1 – May 31. The preferred alternative package would not require commercial data collection but would establish a timeline for when the spatial management area would be re-evaluated in the future to ensure continued assessment of these areas. The NOAA HMS preferred alternative for the evaluation timing is every three years or if

triggered by a set of provisions. Although the Committee was supportive of these measures, they had some reservations and believe the proposed rule will have little to no impact on the fishing industry given the limited shark fishing occurring in this area.

Pelagic Longline Electronic Monitoring Cost Allocation – Preferred Alternative F2

The second component of Amendment 15 considers cost allocation of the HMS pelagic longline EM program. The Committee did not support the NOAA HMS preferred alternative F2, which proposes transferring the electronic monitoring (EM) sampling cost to the industry. The Committee expressed concerns related to the cost associated with the EM systems and the significant financial burden this would place on fisherman. The Committee was also concerned about the potential cost associated with the vendors, lack of negotiable rates, and the unpredictability of system failures. The Committee noted that these issues could have severe impacts on the industry.

The Committee recognized the importance of the current EM program and recommended NOAA HMS reconsider the preferred alternative and suggested F1, no action, as the preferred. Given the limited number of active vessels with bluefin tuna Individual Bluefin tuna Quota (IBQ) and the significant cost associated with the program, the Committee advocated for maintaining the current agency-funded EM program.

The Committee commented that if the current agency-funded EM program could not be maintained, then NOAA HMS should consider addressing electronic monitoring cost allocation through a separate action to allow for a more comprehensive evaluation of available options and provide opportunities to reconsider other alternatives.

Advance Notice of Proposed Rulemaking: Electronic Reporting Requirements for HMS

NOAA HMS is considering several electronic reporting requirements. Some topics under consideration include converting existing commercial paper logbooks to electronic logbooks, expanding logbook reporting to permit holders in additional commercial fisheries and certain recreational fisheries (e.g., HMS Charter/Headboat) via electronic logbooks. As well as collect additional information through existing electronic reporting mechanisms for dealers and recreational permit holders, facilitate HMS reporting through incentives and/or penalties, and provide electronic reporting for HMS Exempted Fishing Permit Program permit holders. The public comment period for the Advance Notice of Proposed Rulemaking on Electronic Reporting closes on August 18, 2023.

The Committee supported NOAA HMS's proposal to implement and/or transition to electronic reporting requirement for NOAA HMS managed species across all sectors. The Committee emphasized the importance of electronic reporting and its ability to gather comprehensive and timely information on catch and landings data. However, the Committee also stressed the importance of streamlining the electronic reporting process and advocated that NOAA HMS consider a unified approach with other regions and fisheries. The Committee also recommended NOAA HMS consider a one-stop reporting system that would facilitate angler's ability to report their catch and satisfy the various reporting requirements that already exist (e.g., New England and Mid-Atlantic commercial and for-hire reporting, private recreational tilefish reporting, etc.). The Committee noted that there are a number of online and application platforms that already exist and that it would be beneficial to both fishermen and NOAA HMS to utilize existing platforms.

The Committee acknowledged compliance issues that are often associated with electronic reporting requirements. The Committee agreed that penalties or incentives may be necessary to enhance compliance rates, and recommended NOAA HMS consider a program that incentivizes participation and encourages accurate data submission.

The Committee also highlighted the importance of balancing simplicity with effective enforcement measures. The Committee noted that the reporting process should be user-friendly while also having appropriate penalties for non-compliance. Creating a system that is easy to navigate but also holds individuals accountable for accurate reporting will be crucial to the program's success.

The Committee had several questions about the proposed electronic reporting requirements but acknowledged these details would likely be explained in the proposed rule. The Committee also recommended NOAA HMS work with GARFO and the regional Councils as they go through this proposed rulemaking process.

Public Comment

An industry representative commented on the Advance Notice of Proposed Rulemaking and emphasized the importance of electronic reporting requirements to adequately manage HMS species. He noted the significant overlap in the HMS and tilefish fisheries and spoke in favor of NOAA HMS implementing and/or transitioning to electronic reporting across all sectors. The industry representative recommended that this action also considers requiring:

- The documentation number attached to the vessel and permit.
- Permit holders to report all gear types onboard (e.g., electric reels, bandit reels, etc.)
- The unique identifier for an individual's U.S. coastguard safety number.
- For-hire permitted vessels that also have a for-sale endorsement to declare their intent/fishing trip type prior to leaving the dock (i.e., for-hire vs. commercial trip).
- "Did not fish" reports.
- Permit holders to identify all their permits (e.g., GARFO permits, etc.) in the reporting system.

The industry representative noted the importance of adding all these requirements to the proposed action. He also expressed that because there are over 6,000 HMS permit holders, implementing rigid reporting requirements is essential to the management of a fleet of this magnitude.

Amendment 16 – Shark Management Issues

NOAA HMS is seeking feedback on a range of shark issues and options. Some of these issues include a variety of commercial and recreational fishery options based on the revised acceptable biological catch and annual catch limits (ACLs) for shark stocks. Potential revisions to commercial fishery options for shark management groups and quotas along with commercial retention limits, and revisions to recreational retention and size limits. The public comment period for Amendment 16 closes on August 18, 2023.

The Committee agreed with the need for more flexibility in the management of sharks and expressed support for measures that would increase harvest opportunities. The Committee recommended adjusting commercial trip limits to better complement the annual catch limits. The

Committee expressed that in many cases the current trip limits are too restrictive and have limited fishing efforts and industry's ability to catch the quota.

Although the Committee noted that although Amendment 16 represents progress, there was concern that the rulemaking would have minimal impact on the fishing industry given the limited number of participants in the fishery and lack of a market. The Committee also expressed that there is minimal recreational effort on sharks due to the regulations on thresher and short fin mako shark, which historically have been the primary species targeted for food. However, the Committee recognized that in some areas there is still a small food fishery and for this reason was supportive of Amendment 16 and the intent of this action.

The Committee also discussed the Shark Fin Elimination Act and the confusion associated with the proper way to dispose of the fins after the shark has been landed. The Committee recommended NOAA HMS provide clear messaging on this issue to avoid any future challenges.



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

M E M O R A N D U M

Date: July 27, 2023
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 August 2023 Council Meeting:

1. 2023 Council Meeting Topics
2. 2023-2024 NRCC Stock Assessment Schedule
3. Council Letter to FDA: Molluscan Shellfish Federal Waters Biotxin Protocols (7/24/23)
4. Council Letter to GARFO and NEFSC: Comments on Geographic Strategic Plan for New England and Mid-Atlantic (7/25/23)
5. Recreational Sector Separation and Catch Accounting Amendment – Revised Action Plan and Timeline
6. Press Release: U.S. Fishery Management Council Report Finds More than 72% of Federal Waters Classified as “Conservation Areas” (6/23/23)
7. Staff Memo: Updates on Offshore Wind Energy Development

2023 Planned Council Meeting Topics

Updated: 7/26/23

August 8-11, 2023 Council Meeting – Annapolis, MD

- 2024-2025 Summer Flounder and Scup Specifications and Commercial Measures: approve (joint with ASMFC SFSBSB Board)
- 2024 Black Sea Bass Specifications and Commercial Measures: approve (joint with ASMFC SFSBSB Board)
- Scup Commercial Discards and Gear Restricted Areas (GRA): review analysis and discuss next steps
- Recreational Harvest Control Rule 2.0 Framework/Addenda: discuss next steps (with ASMFC Policy Board)
- 2024-2025 Bluefish Specifications and Recreational Management Measures: approve (joint with ASMFC Bluefish Board)
- 2024-2025 Atlantic Mackerel Specifications: approve
- 2024-2025 Atlantic Mackerel River Herring and Shad Cap: approve
- Research Set-Aside Program Redevelopment: update
- *Illex* Hold FW Meeting #1: approve range of alternatives
- East Coast Scenario Planning Initiative: review outcomes and identify MAFMC next steps
- NMFS Climate Governance Policy: develop Council comments
- [2024-2026 Longfin Squid Specifications: approve](#)
- [Council Comments on ANPR to Revise National Standards 4, 8, and 9 Guidelines](#)

October 3-5, 2023 Council Meeting – New York City, NY

- ~~SCOQ Species Separation Requirements Amendment: review and approve any additional alternatives~~
- ~~2024-2026 Longfin Squid Specifications: approve~~
- *Illex* Hold FW Meeting #2: final action
- Executive Committee: review progress on 2023 Implementation Plan and discuss draft 2024 deliverables
- Policy/Process for Reviewing Exempted Fishing Permit Applications for Unmanaged Forage Amendment Ecosystem Component Species: approve
- Private Recreational Tilefish Permitting and Reporting: review performance
- EAFM Risk Assessment Review: approve
- ~~Biennial Review of 2020-2024 Research Priorities Document: review and approve~~
- Habitat Activities (including aquaculture): update
- Offshore Wind: update
- ~~NTAP Restrictor Rope Research: review results~~
- [Spiny Dogfish Assessment and Peer Review Overview](#)
- [Atlantic Mackerel Assessment Peer Review Overview](#)
- [NEFSC Cooperative Research Update](#)
- [NEFSC Presentation on Science of “Big Old Fecund Fish”](#)

~~—[Monkfish and Dogfish Joint Framework to Reduce the Bycatch of Atlantic Sturgeon: review and approve range of alternatives](#)~~

December 11-14, 2023 Council Meeting – Philadelphia, PA

- 2024-2025 Recreational Management Measures for Summer Flounder and Scup: approve (joint with ASMFC SFSBSB Board)
- 2024 Recreational Management Measures for Black Sea Bass: approve (joint with ASMFC SFSBSB Board)
- Summer Flounder Commercial Minimum Mesh Size Regulations and Exemptions: review and discuss next steps (joint with ASMFC SFSBSB Board)
- ~~—[Summer Flounder, Scup, Black Sea Bass, and Bluefish Sector Separation and Recreational Catch Accounting Amendment: review and approve draft scoping document \(joint with ASMFC Policy Board\)](#)~~
- Recreational Harvest Control Rule 2.0 Framework/Addenda: review and discuss next steps (with ASMFC Policy Board)
- ~~—[Monkfish and Dogfish Joint Framework to Reduce the Bycatch of Atlantic Sturgeon: final action](#)~~
- 2024 Implementation Plan: approve
- Golden Tilefish IFQ Program Review: review final report
- 2024-2026 Spiny Dogfish Specifications: approve
- [Biennial Review of 2020-2024 Research Priorities Document: review and approve](#)

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

2023 Council Meeting Topics At-a-Glance

	August	October	December
Mackerel, Squid, Butterfish and River Herring and Shad (RH/S)	<ul style="list-style-type: none"> • 2024-2025 Atlantic Mackerel Specs • 2024-2025 RH/S Cap • <i>Illex</i> Hold FWM #1* • 2024-2026 Longfin Squid Specs 	<ul style="list-style-type: none"> • <i>Illex</i> Hold FWM #2* 	
Recreational Reform	<ul style="list-style-type: none"> • Rec Harvest Control Rule 2.0 FW: Discuss 		<ul style="list-style-type: none"> • Rec Sector Separation and Catch Accounting Amd: Approve Scoping Doc • Rec Harvest Control Rule 2.0 FW: Discuss
Summer Flounder, Scup, Black Sea Bass (SF/S/BSB)	<ul style="list-style-type: none"> • 2024-2025 Summer Flounder and Scup Specs and Commercial Measures • 2024 Black Sea Bass Specs and Commercial Measures • Scup GRA Review 		<ul style="list-style-type: none"> • 2024-2025 Summer Flounder and Scup Rec Mgmt Measures • 2024-2025 Black Sea Bass Rec Mgmt Measures • SF Commercial Min Mesh Size Review
Bluefish	<ul style="list-style-type: none"> • 2024-2025 Bluefish Specs and Rec Measures 		
Golden and Blueline Tilefish		<ul style="list-style-type: none"> • Private Tilefish Permitting/ Reporting Update 	<ul style="list-style-type: none"> • Golden Tilefish IFQ Program: Review Final Report
Atlantic Surfclam and Ocean Quahog (SC/OQ)			
Spiny Dogfish			2024-2026 Dogfish Specs
Monkfish			
Science Issues	<ul style="list-style-type: none"> • RSA Redevelopment Update 	<ul style="list-style-type: none"> • 2020-2024 Research Priorities Document Review • NTAP Restrictor Rope Results 	
EAFM		<ul style="list-style-type: none"> • EAFM Risk Assessment Review: Approve • Council Process for Reviewing EFP Applications: Approve 	
Habitat/ Wind/ Aquaculture		<ul style="list-style-type: none"> • Habitat Update • Wind Update 	
Protected Resources		<ul style="list-style-type: none"> • Dogfish/ Monkfish FW to Reduce Sturgeon Bycatch: Approve Alternatives 	
Other	<ul style="list-style-type: none"> • Scenario Planning: Next Steps • NMFS Climate Governance Policy • ANPR: National Standard 4-8-9 	<ul style="list-style-type: none"> • Executive Committee: Draft 2024 Deliverables 	<ul style="list-style-type: none"> • 2024 Implementation Plan: Approve

Acronyms/Abbreviations

ALWTRP	Atlantic Large Whale Take Reduction Plan	NEFSC	Northeast Fisheries Science Center
EAFM	Ecosystem Approach to Fisheries Management	NTAP	Northeast Trawl Advisory Panel
EFH	Essential Fish Habitat	Rec	Recreational
FMP	Fishery Management Plan	RH/S	River Herring and Shad
GRA	Gear Restricted Area	RSA	Research Set-Aside
HMS	Highly Migratory Species	SC/OQ	Atlantic Surfclam and Ocean Quahog
Mgmt	Management	SF/S/BSB	Summer Flounder, Scup, Black Sea Bass
MREP	Marine Resource Education Program	Specs	Specifications
MSB	Mackerel, Squid, Butterfish	SSC	Scientific and Statistical Committee

2023-2024 NRCC Stock Assessment Schedule

For additional information about management track assessments and research track assessments, please see the Appendix.

2023

	Species/Topic	Stock Area	Management Organization(s)
June Management Track	Bluefish		MAFMC, ASMFC
	Deep-sea red crab		NEFMC
	Jonah crab*		ASMFC
	Longfin inshore squid		MAFMC
	River herring*		ASMFC
	Scup		MAFMC, ASMFC
	Summer flounder		MAFMC, ASMFC
July Joint US/Canada Assessments Transboundary Resources Assessment Committee (TRAC)	Atlantic cod	Eastern Georges Bank	NEFMC
	Haddock	Eastern Georges Bank	NEFMC
	Yellowtail flounder	Georges Bank	NEFMC
July/August Research Track	Atlantic cod	Eastern Gulf of Maine	NEFMC
		Georges Bank	NEFMC
		Southern New England	NEFMC
		Western Gulf of Maine	NEFMC
September Management Track	Acadian redfish		NEFMC
	Atlantic mackerel		MAFMC
	Red hake	Northern	NEFMC
	Red hake	Southern	NEFMC
	Silver & Offshore hake	Southern	NEFMC
	Silver hake	Northern	NEFMC
	Skate Complex (barndoor, clearnose, little, rosette, smooth, thorny, winter)		NEFMC
	Spiny Dogfish		NEFMC, ASMFC, MAFMC
	Windowpane flounder	Northern	NEFMC
	Windowpane flounder	Southern	NEFMC
October Research Track	Black sea bass		MAFMC, ASMFC
November Research Track	Applying State Space Models		

* Stock assessments denoted with an asterisk are conducted by the Atlantic States Marine Fisheries Commission. All other assessments are conducted by the Northeast Fisheries Science Center.

2024

	Species/Topic	Stock Area	Management Organization(s)
March Research Track	Golden tilefish		MAFMC
June Management Track	Atlantic cod	Eastern Gulf of Maine	NEFMC
	Atlantic cod	Georges Bank	NEFMC
	Atlantic cod	Southern New England	NEFMC
	Atlantic cod	Western Gulf of Maine	NEFMC
	Atlantic herring		NEFMC, ASMFC
	Atlantic surfclam		MAFMC
	Black sea bass		MAFMC
	Butterfish		MAFMC, ASMFC
	Golden Tilefish		MAFMC
	Northern shrimp*		ASMFC
	Shad*		ASMFC
	Striped bass*		ASMFC
	Sturgeon*		ASMFC
July Joint US/Canada Assessments Transboundary Resources Assessment Committee (TRAC)	Atlantic cod	Eastern Georges Bank	NEFMC
	Haddock	Eastern Georges Bank	NEFMC
	Yellowtail flounder	Georges Bank	NEFMC
September Management Track	American plaice		NEFMC
	Atlantic halibut		NEFMC
	Haddock	Georges Bank	NEFMC
	Haddock	Gulf of Maine	NEFMC
	Pollock		NEFMC
	Witch flounder		NEFMC
November Research Track	Yellowtail flounder	Cape Cod / Gulf of Maine	NEFMC
		Southern New England / Mid-Atlantic	NEFMC
		Georges Bank [TRAC]	NEFMC

* Stock assessments denoted with an asterisk are conducted by the Atlantic States Marine Fisheries Commission. All other assessments are conducted by the Northeast Fisheries Science Center.

Appendix: Stock Assessment Type Definitions

Management Track Assessments

Management track assessments provide routine, scheduled, and updated advice to directly inform management actions. These assessments are designed to be:

- Simple, quick, efficient, and flexible: and
- Able to incorporate new information on a regular cycle.

Management track assessments ensure that stock status is updated on a regular and predictable basis.

Research Track Assessments

Research track assessments are complex scientific efforts that are designed to be carried out over several years. They can:

- Focus on research topics or on one or more individual stocks:
- Evaluate an issue or new model that could apply to many stocks: and/or
- Consider extensive changes in data, model, or stock structure.

Research assessments can provide the basis for future management assessments.



Mid-Atlantic Fishery Management Council

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Christopher M. Moore, Ph.D., Executive Director

July 24, 2023

Steven W. Bloodgood
Director, Division of Seafood Safety
Center for Food Safety & Applied Nutrition
U.S. Food and Drug Administration
5001 Campus Drive, RM 3C103
College Park, Maryland 20740

Dear Steven:

The Mid-Atlantic Fishery Management Council manages more than 65 marine species in federal waters and is composed of members from the coastal states of New York to North Carolina (including Pennsylvania). Our Council, along with National Oceanic and Atmospheric Administration (NOAA) Fisheries, is responsible for the management of the Atlantic surfclam and ocean quahog fisheries that are prosecuted in the Federal waters off the Northeast US. Because any changes to molluscan shellfish Federal waters biotoxin protocols under the National Shellfish Sanitation Program (NSSP) Model Ordinance may impact these fisheries, my staff have been tracking this issue with support from your staff at the Food and Drug Administration (Quentin Forrest) and with the NOAA Office of International Affairs, Trade, and Commerce - Office of Seafood Inspection (Laurice Churchill).

At our recent June 2023 Council Meeting, fishing industry members raised specific questions regarding what would be required to change the current paralytic shellfish poisoning (PSP) closed area on Georges Bank to an open, controlled status access area. As such, please provide an update on the steps and associated timing involved with the implementation of any changes to molluscan shellfish Federal waters biotoxin protocols that may impact our Atlantic surfclam and ocean quahog fisheries and allow for an opening of this closed area.

We look forward to your response. Please call me or Jessica Coakley of my staff if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "C. Moore".

Christopher M. Moore, Ph.D.
Executive Director

cc: L. Churchill, J. Coakley, J.Q. Forrest, M. Luisi, J. Montañez, M. Pentony, D. Potts, W. Townsend



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July 25, 2023

Dr. Jon Hare
Science and Research Director
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543

Mr. Michael Pentony
Regional Administrator
National Marine Fisheries Service
Greater Atlantic Region
55 Great Republic Drive
Gloucester, MA 01930-2276

Dear Dr. Hare and Mr. Pentony:

The Mid-Atlantic Fishery Management Council appreciates the opportunity to submit comments on the draft NOAA Fisheries New England and Mid-Atlantic Geographic Strategic Plan for 2024-2028. In general, the Council supports this effort to update the regional strategic plan and hopes that it will promote greater coordination and collaboration among the region's fishery management partners. Council members and staff have reviewed the draft plan and developed the following comments and recommendations.

Top Geographic Priorities (page 7): There is extra, duplicative language at the end of the sixth bullet that should be deleted ("Facilitate and increase the accessibility of information in support of regional priorities, for both our staff and our constituents., **for both our staff and our constituents.**") Also, the meaning of "regional priorities" in this context is unclear. Is it referring to the strategic plan priorities, or does it also encompass the priorities of the Council and other regional partners? While the Council strongly supports efforts to facilitate and increase the accessibility of information, we note that none of the strategic goal sections appear to directly address this priority. We believe there is a continued need to strengthen the connection between management and research to ensure that research is conducted and communicated in a manner that is useful to resource managers. We suggest incorporating additional language to address this priority under Strategy 1.1.

Strategic Goal #1, Key Performance Indicators (page 8): The second bullet refers to core data collection efforts, but there is no mention of fishery dependent data collection efforts such as dockside monitoring or the study fleet. These are critical data elements that need to continue and be completed each year. We recommend modifying the beginning of the sentence to read "Complete core fisheries-independent **and -dependent surveys...**". We recommend making the same change to the last sentence of Strategy 1.1 (page 9).

Strategic Goal #1, Strategy 1.5 (page 10): There is a need to define and identify the underserved communities in the Mid-Atlantic region. Having a specific definition and identification of our underserved communities is a critical first step in order to be effective at engaging and supporting these communities. We suggest modifying the second sentence of Strategy 1.5 to read "**Identify and engage with underserved communities...**".

Strategic Goal #2, Key Performance Indicators (page 11): The meaning of the second bullet is unclear (“Increase the number and percentage of recovery actions ongoing or completed.”) This could be interpreted to mean that we are striving for more protected species recovery actions. However, wouldn’t we want this indicator to go down as we have less need for recovery actions over time? Providing some clarity here would be helpful.

Minor/editorial comments:

- Strategy 1.6 (page 10) – “IUU” acronym should be spelled out/defined.
- Strategy 2.1 (page 11) – “North Atlantic right whales” should be “the North Atlantic right whale.”
- Strategy 3.2 (page 13) – Add “(DEIA)” at the end of the first sentence.

Thank you for this opportunity to review and comment on the draft Greater Atlantic Region Geographic Strategic Plan. We hope you will find our comments helpful. Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Moore". The signature is fluid and cursive, with a large initial "C" and a stylized "Moore".

Christopher M. Moore, Ph.D.
Executive Director

cc: M. Luisi, W. Townsend



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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 26, 2023

To: Chris Moore, Executive Director

From: Kiley Dancy and Hannah Hart, Staff

Subject: Proposed Timeline Revisions for Recreational Sector Separation and Catch Accounting Amendment

Given our internal discussions regarding staff workload and the planned timeline for the Recreational Sector Separation and Catch Accounting Amendment, we have tentatively revised the amendment action plan for discussion with the Council. These revisions are provided below. We propose shifting the approval of a scoping document from December 2023 to Spring 2024 and shifting scoping hearings from January/February 2024 to Spring/Summer 2024. Depending on the anticipated joint meeting schedule over the next few years, this would shift the timeline back by a few months for each subsequent step. Commission staff are planning to share a similar update with the Policy Board.



Recreational Sector Separation and Catch Accounting Amendment to the Summer Flounder, Scup, and Black Sea Bass and Bluefish Fishery Management Plans

Draft Action Plan

April/2023 Revised July 24, 2023

Amendment Goal: The purpose of this amendment is to review and consider options for managing for-hire recreational fisheries separately from other recreational modes (referred to as sector separation) as well as options related to recreational catch accounting, such as private angler reporting and enhanced vessel trip reporting (VTR) requirements for the summer flounder, scup, black sea bass, and bluefish fisheries. This action aims to address expressed interest in sector separation to make better use of for-hire VTR data, which some anglers perceive as being more accurate than the Marine Recreational Information Program (MRIP) data. In addition, this action considers options to improve recreational catch accounting with the intent to reduce uncertainty in the recreational data. This amendment is being developed by the Mid-Atlantic Fishery Management Council (Council) and Atlantic States Marine Fisheries Commission (Commission).

Types of Measures Expected to be Considered: The Council and the Commission's Interstate Fishery Management Program Policy Board (Policy Board) will review and consider options for managing for-hire recreational fisheries separately from other recreational modes (referred to as sector separation) as well as options related to recreational catch accounting for summer flounder, scup, black sea bass, and bluefish. In previous conversations on these issues, the types of measures for potential consideration included:

Sector separation

- No action/status quo
- Managing the recreational for-hire and private/rental fisheries with separate allocations of catch or harvest, including possible options for:
 - Separate Annual Catch Limits (ACLs) for each recreational sector
 - Separate Recreational Sub-ACLs for each recreational sector
 - Separate Recreational Harvest Limits (RHLs)
- Managing the recreational for-hire and private/rental fisheries with separate management measures (bag limits, size limit, seasons, or other measures). Although this is already done for some species/state/mode combinations, this amendment may consider a more uniform approach to separate measures. If the Council and Policy Board choose to prioritize separate measures over other types of sector separation, an amendment may not be necessary depending on the options considered.

Recreational catch accounting

- No action/status quo
- Mandatory private angler reporting
- Tagging programs (i.e., anglers or groups of anglers are issued tags for specific number of fish each year)
- Mandatory tournament reporting

- Enhanced VTR requirements
- Voluntary angler reporting programs to supplement or enhance recreational survey programs

Fishery Management Action Team (FMAT)/Plan Development Team (PDT)

An FMAT/PDT has been partially formed to assist with development and analysis of potential alternatives. Additional state representatives are expected to be identified by the Board. FMAT/PDT members are listed in the table below. Other Council, Commission, and NOAA Fisheries staff, as well as other experts, will be consulted as needed.

Name	Agency	Role/Expertise
Tracey Bauer	Atlantic States Marine Fisheries Commission	FMAT/PDT Co-Chair
Kiley Dancy	Mid-Atlantic Fishery Management Council	FMAT/PDT Co-Chair
Hannah Hart	Mid-Atlantic Fishery Management Council	FMAT/PDT Co-Chair
Emily Keiley	NMFS Greater Atlantic Regional Fisheries Office	Fisheries policy and legal requirements
Marianne Randall	NMFS Greater Atlantic Regional Fisheries Office	National Environmental Policy Act requirements
Sara Turner	NMFS Greater Atlantic Regional Fisheries Office	Scientific and technical analysis of federal fisheries management
Scott Steinback	NOAA Fisheries Northeast Fisheries Science Center	Recreational fisheries economist
<u>TBD</u>	<u>TBD</u>	<u>Additional state/Technical Committee representatives to be identified by the Policy Board</u>

Expected Amendment Timeline:

This amendment was initiated in October 2020 along with several other [Recreational Reform Initiative Topics](#). However, in February 2021, work on this amendment was put on hold to prioritize development of the Recreational Harvest Control Rule Framework/Addenda. In December 2022 the Council and Policy Board agreed to continue to develop the Recreational Sector Separation and Catch Accounting Amendment.

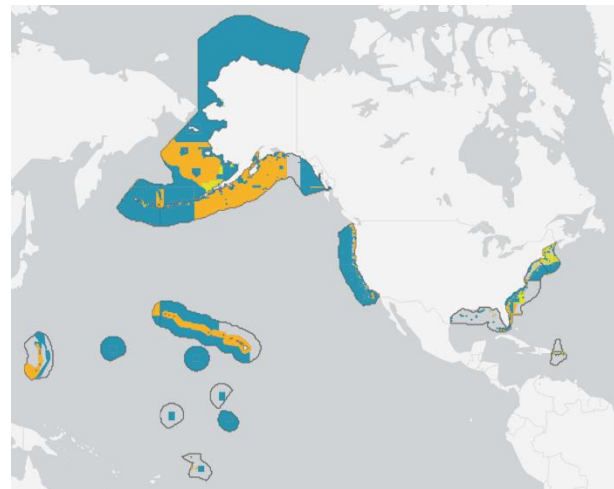
The expected amendment timeline (as of [January-July 2023](#); assuming an environmental assessment; subject to change) is as follows:

Summer/Fall 2023 <u>Spring/Summer 2023</u>	Form Fishery Management Action Team (FMAT)/ Plan Development Team (PDT)
Summer-Fall 2023 <u>Early 2024</u>	FMAT/PDT develops issues for consideration and draft scoping document. Possible Advisory Panel (AP) and Monitoring Committee discussion.
December 2023 <u>Spring 2024</u>	Council and Policy Board approve a scoping and public information document for public comment
January-February 2024 <u>Spring/Summer 2024</u>	Scoping hearings and comment period
Spring 2024 <u>Summer 2024</u>	APs review scoping comments and provide input to Council and Policy Board on scope of amendment and possible approaches
Spring 2024 <u>Summer 2024</u>	FMAT/PDT reviews scoping comments and AP input and provides recommendations to Council and Policy Board on scope of amendment and possible approaches
Spring 2024 <u>August 2024</u>	Council and Policy Board review scoping comments and FMAT and AP recommendations; define scope of action
Summer 2024 <u>Fall 2024</u>	FMAT/PDT begins to develop draft alternatives
August 2024 <u>December 2024</u>	Council and Policy Board review preliminary alternatives
Fall 2024 <u>Winter/Spring 2025</u>	Continued FMAT/PDT development and analysis of alternatives; AP input on draft alternatives
December 2024 <u>Spring/Summer 2025</u>	Council and Policy Board approve final range of alternatives for inclusion in a public hearing document/Commission draft amendment document
Winter 2025 <u>Fall 2025</u>	FMAT/PDT develops public hearing document/Commission draft amendment document
Spring-December 2025	Council and Policy Board approve public hearing document; Policy Board approves draft amendment document for public comment
Spring/Summer 2025 <u>Winter 2026</u>	Public hearings and comment period
Spring/Summer 2025 <u>Winter/Spring 2026</u>	AP meeting to provide input on preferred alternatives; FMAT/PDT meeting to provide recommendations to Council/Board
August 2025 <u>Spring 2026</u>	Final action
Summer 2026 <u>Fall 2025</u>	Staff develop and submit draft environmental assessment (EA)
Winter-Fall 2026	NMFS and other agencies review EA; final edits completed; Rulemaking and comment periods (4-7 months after EA finalized)
TBD	Target effective date (may or may not need to line up with start of fishing year depending on measures approved)



U.S. Fishery Management Council Report Finds More than 72% of Federal Waters Classified as “Conservation Areas”

The nation’s eight regional fishery management councils (Councils) have released a first-ever synthesis of conservation areas in federal waters of the United States. The [report](https://www.fisherycouncils.org/area-based-management), located on <https://www.fisherycouncils.org/area-based-management>, identifies hundreds of conservation areas covering nearly three quarters of federal waters. These findings demonstrate that a large portion of federal waters are protected from fishing activities that could negatively impact the environment.



Conservation areas in the U.S. federal waters

The report was developed with the goal of identifying conservation areas that should be included in the American Conservation and Stewardship Atlas (Atlas). Development of the Atlas is one component of the Biden Administration’s America the Beautiful initiative, which aims to conserve 30% of U.S. lands and waters by 2030. According to the Biden Administration, the Atlas will be a “tool through which to measure the progress of conservation, stewardship, and restoration efforts across the United States.” The Council Coordination Committee (CCC), consisting of leadership from the eight fishery management councils, formed an Area-Based Management Subcommittee in May 2021 to identify conservation areas in federal waters.

“Our subcommittee produced a first-of-its-kind, groundbreaking, and highly detailed analysis of the conservation areas developed by all eight regional fisheries management councils under our authority mandated by the Magnuson-Stevens Act,” said Eric Reid, Chair of the CCC Area-Based Management Subcommittee. “These conservation areas are designed to maintain the productivity and biodiversity of marine ecosystems and balance fishery access to a wide variety of user groups.”

Areas under consideration were subject to a newly developed, rigorous review process that included defining a “conservation area” and then screening each area relative to qualifying criteria based on a combination of international standards for conservation and the America the Beautiful principles.

Based on those criteria, the subcommittee identified a total of 648 conservation areas covering more than 72%, or nearly 3.4 million square miles, of federal waters. The report includes an in-depth examination of fishing gear restrictions, with a focus on various configurations of “bottom tending” gear which contact the sea floor. According to the report, bottom trawling is prohibited in over half of U.S. federal waters, and over a third of the U.S. federal waters include prohibitions on all bottom tending gears.

Appendix A of the report includes summaries and maps of each Council’s conservation areas. Appendix B provides additional details and links, an evaluation relative to the eight America the Beautiful principles, and an effectiveness checklist. For those interested in exploring the maps more closely, the subcommittee also developed an [interactive "dashboard" tool](#) to serve as a companion to the report. The dashboard is a work in progress and will continue to be refined in the months to come.

“The CCC strongly encourages NOAA and other agencies involved in Atlas development to incorporate the conservation areas identified in the report,” said Dr. Greg Stunz, CCC Chair. “By including these areas in the Atlas, the U.S. effectively demonstrates how the Councils’ fishery management measures directly result in improved conservation outcomes that benefit sustainable fisheries, other marine species, and habitats.”

For more information visit the [Area-Based Management webpage](#).

Contact [Michelle Bachman](#) or [Eric Reid](#) with technical questions about CCC Area-Based Management efforts and products.

Use this list of regional [contacts](#) for media inquiries or general questions.



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: July 27, 2023
To: Chris Moore, Executive Director
From: Julia Beaty, staff
Subject: Updates on Offshore Wind Energy Development

This memo summarizes recent updates on offshore wind energy development. This list is not intended to be exhaustive and focuses on updates of greatest relevance to the Mid-Atlantic Fishery Management Council.

- **EFH consultations for offshore wind projects:** Concerns about the essential fish habitat (EFH) consultation process, including concerns articulated in a [June 27, 2023 letter from the National Marine Fisheries Service](#) (NMFS), prompted the executive directors of the Mid-Atlantic and New England Councils to submit a letter to the Bureau of Ocean Energy Management (BOEM) supporting the NMFS EFH conservation recommendations for the Revolution Wind project offshore of Massachusetts. This Council letter is appended to this memo. NMFS provided the following summary of the offshore wind EFH consultation process to provide context for this letter.

In accordance with the Magnuson-Stevens Act, federal agencies, including BOEM are required to consult with NMFS for all activities they authorize, fund, or undertake that may adversely affect EFH. This consultation process involves preparation of an EFH assessment that describes the proposed action, analyzes the potential adverse effects of the action on EFH and the managed species, and includes the federal agency's conclusions regarding the effects of the action on EFH. Consultations for offshore wind projects are challenging both for NMFS and the federal action agencies due to their large scale, the complex nature of the work proposed and the habitats affected, the number of projects proceeding through the National Environmental Policy Act (NEPA) process and EFH consultation process simultaneously, and the two-year time frame mandated by [the FAST-41 process](#). In addition, the site assessment process for offshore wind projects has been proceeding concurrently with the development and review of the Construction and Operations Plans, rather than in sequence. This has led to changes in some projects late in the consultation process. All these factors combined have resulted in EFH assessments that may not include a complete description of the activities proposed or fail to fully evaluate all the potential effects. While BOEM works hard to ensure NMFS has a complete EFH assessment, it can take time to obtain, compile and analyze information provided to address the NMFS comments on draft assessments. This can push the

conclusion of the EFH consultations closer to the end of the NEPA process than both NMFS and BOEM would prefer.

NMFS is working closely with BOEM and the US Army Corps of Engineers (USACE) to improve coordination, encourage the preparation of complete EFH assessments, and allow the EFH consultation process to be completed sooner. NMFS has worked closely with BOEM and the Volpe Institute to develop an EFH assessment template which should provide BOEM's contractors and developers with a better understanding of the information and analysis needed for a complete EFH assessment. NMFS has developed Habitat Mapping Guidance and Offshore Wind Information Needs available on the [Offshore Wind Technical Assistance](#) website, and is working to improve coordination with BOEM and the USACE both before and after NMFS provides EFH conservation recommendations to the agencies. NMFS is also altering the format of their letters to provide more clarity in their EFH conservation recommendations.

- **Submitted comment letters:** Since the June 2023 Council meeting, the Council submitted the following comment letters:
 - [Joint MAFMC and NEFMC Letter to BOEM: NOI for the Beacon Wind Project \(7/26/2023\)](#)
 - [Joint MAFMC and NEFMC Letter to BOEM: EFH Conservation Recommendations for the Revolution Wind project \(7/19/2023\)](#)
 - [Joint MAFMC and NEFMC Letter to BOEM: Atlantic Shores South Wind DEIS \(6/30/2023\)](#)
- **Ongoing construction:** Construction is underway for the South Fork and Vineyard Wind 1 projects.
 - **South Fork Wind:** Turbine foundations are currently being installed. For the most recent updates on construction activities, see the Northeast mariners briefings posted [here](#).
 - **Vineyard Wind 1:** Turbine foundations are currently being installed and preparation work, including pre-lay grapnel runs, is underway for the inter-array cables. The most recent updates on construction activities are available [here](#).
- **Ongoing survey activities:** Geophysical, geotechnical, fisheries, and other types of survey work are underway for many wind projects throughout the region. These surveys use a variety of gear types, including some equipment that is installed in a location for extended periods of time (e.g., buoys, acoustic receivers). The best way to stay informed of these survey activities is to sign up for email updates from individual wind developers (see the project specific links available [here](#)).
- **Fisheries liaison outreach:** Fisheries liaisons for most offshore wind projects periodically host port hours, dock visits, and other outreach events. The best way to stay informed of these events is to sign up for email updates from individual wind developers (see the project specific links available [here](#)).
- **Recently published studies:** Three Northeast Fisheries Science Center (NEFSC) staff authored a review article in the journal *Frontiers* (volume 10 -2023) titled “Offshore wind project-level monitoring in the Northeast U.S. continental shelf ecosystem: evaluating the potential to mitigate impacts to long-term scientific surveys” (available [here](#)).

- **NEFSC/URI partnership:** The NEFSC and the University of Rhode Island (URI) have signed a 5-year formal partnership agreement to research how offshore wind energy development will affect marine ecosystems and the people who live near, or work on, the ocean. More information is available [here](#).
- **Fisheries compensation bidding credits in the Gulf of Mexico:** BOEM published a final sale notice for wind leases in the Gulf of Mexico. This lease auction will allow bidding credits of up to 10% of a cash bid in exchange for a commitment to establish and contribute the bidding credit amount to a Fisheries Compensatory Mitigation Fund for commercial and for-hire recreational fisheries. More information is available [here](#).
- **Stay informed:** To stay up to date on individual wind projects, including development of fishery communications plans, details on offshore survey operations, outreach events, and other updates, see the project-specific links available at <https://www.mafmc.org/offshore-wind-notices>.



July 19, 2023

Jessica Stromberg, Chief
Environmental Branch for Renewable Energy
Bureau of Ocean Energy Management
45600 Woodland Road (VAM-OREP)
Sterling, Virginia 20166

Re: EFH Conservation Recommendations for the Revolution Wind project

Dear Ms. Stromberg,

Please accept these comments from the New England Fishery Management Council (New England Council) and Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) urging BOEM to adopt NOAA Fisheries' essential fish habitat conservation recommendations (EFH CRs) for the Revolution Wind project off Rhode Island and Massachusetts. These recommendations were communicated by NOAA Fisheries to BOEM in a June 16, 2023 letter and are consistent with recommendations and concerns identified in the Councils' scoping and DEIS comments¹.

There is no public comment period associated with these EFH CRs and the Councils do not typically comment on EFH CRs separately from commenting on the DEIS. However, we are especially concerned about the potential for population-level impacts to Atlantic cod from construction of Revolution Wind. We were disappointed by BOEM's recent response to NOAA Fisheries' EFH CRs for the Ocean Wind 1 project off New Jersey and hope this letter will encourage BOEM to more seriously consider the EFH CRs for the Revolution Wind project.

As you know, the Councils are responsible for designating EFH and Habitat Areas of Particular Concern (HAPC) for the species under our fishery management plans, and partner with NOAA Fisheries on EFH consultations. NOAA Fisheries' June 16 letter describes their EFH consultation roles and responsibilities.

We especially wish to highlight NOAA Fisheries' Atlantic cod spawning EFH CRs. A recently completed stock identification study (McBride and Smedbol, 2022)² concluded that Southern New England cod are a distinct sub-population (i.e., distinct from the Georges Bank and Gulf of Maine sub-populations). This refinement to the stock structure was incorporated into stock assessments that will be peer reviewed in early August 2023. This new understanding of the stock structure means offshore wind project construction could have **population-level impacts** on the Southern New England sub-population of Atlantic cod.

¹ [210601-NEFMC-MAFMC-to-BOEM-re-Revolution-Wind-NOI](#); [221017-NEFMC-MAFMC-to-BOEM-Revolution-Wind-DEIS](#)

² McBride, Richard S. (editor) and Smedbol, R. Kent (editor) (2022). An Interdisciplinary Review of Atlantic Cod (*Gadus morhua*) Stock Structure in the Western North Atlantic Ocean. <https://doi.org/10.25923/sk1x-z919>



Based on current assessment information, all Atlantic cod stocks in this region are overfished and experiencing overfishing. The New England Council and NOAA Fisheries are managing these stocks under a rebuilding plan and the fisheries are subject to restrictive, scientifically-based management measures. As described in more detail below, we are very concerned that these rebuilding efforts will be severely compromised by construction of the Revolution Wind project if the NOAA Fisheries cod spawning EFH CRs are not fully implemented.

As described in the EFH CRs, avoiding construction in areas and seasons where spawning is known or likely to occur is the best way to minimize impacts of the project on fish behavior and spawning success. Cod rely on acoustic communication during spawning, and physical or acoustic disturbances to the seabed or water column during the spawning season could negatively impact spawning success. A multi-year BOEM-funded acoustic study conducted by NOAA Fisheries (Van Hoeck et al., 2023³) has clearly documented the importance of Cox Ledge and surrounding waters as a spawning ground. These grounds overlap the central portion of the Revolution Wind project area, and NMFS has recommended removal of turbine positions that have a high degree of overlap with these well-documented spawning sites, specifically positions 36, 37, 38, 39, 44, 45, 46, 49, and 50. These positions represent a subset of those recommended for removal under Alternatives C1 and C2 in the DEIS. Even if these positions are removed, impacts to this habitat will be unavoidable if the substation-link cable passes directly through this area as proposed. We urge BOEM to adopt NMFS' recommendation to reroute this cable around these important areas.

Time of year restrictions on construction activity during specific months of the year in which cod are known to spawn (i.e., November 1 through March 31) are key to minimize impacts. Some acoustic impacts will be minimized due to prohibitions on pile driving between January 1 and April 30 as proposed to protect North Atlantic Right Whales, however the months of November and December fall outside this window. As we read the mitigation measures for marine mammals, daytime pile driving is the default to facilitate the work of mammal observers, unless specific nighttime plans are approved. Daytime construction work will not minimize impacts to Southern New England cod as their spawning vocalization is most active during the day, as demonstrated by the acoustic study referenced above. This is distinct from other cod stocks where peaks in grunt vocalizations occur at night (Grabowski et al., 2015; Zemeckis et al., 2019).

In addition to measures to mitigate the effects of development, scientific surveys capable of identifying spawning aggregations (EFH CR4) are an essential component of NOAA Fisheries' recommendations. BOEM must rely on the best available science, i.e., the ongoing BOEM-funded acoustic research, to identify an alternative for the project that will minimize impacts to Atlantic cod.

As noted by NOAA Fisheries, the Revolution Wind project area includes large areas of extremely complex habitat and there are numerous locations that should be avoided in addition to

³ Van Hoeck, R. V., et al. (2023). "Comparing Atlantic Cod Temporal Spawning Dynamics across a Biogeographic Boundary: Insights from Passive Acoustic Monitoring." Marine and Coastal Fisheries 15(2).



New England
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those NOAA Fisheries recommends removal for cod spawning. More specifically, for both turbines and associated inter-array cabling, we recommend removing positions B48, B52, B53, B61, and B62. There is a close correspondence between the turbine positions recommended for avoidance due to cod spawning protection and complex habitats. Other portions of the lease area where cod spawning activity has not been documented are also highly complex with high backscatter and dense boulder fields.

Given the habitat conditions at the project site, substantial boulder clearance activities will be required to construct the project. It is essential that such relocation be completed in a way that does not create obstructions to fishing operations in the vicinity. We agree with NOAA Fisheries' recommendations regarding relocated boulders, including that a detailed boulder relocation plan must be developed and approved before work begins. Boulders should be relocated to areas adjacent to similar natural habitats. Eliminating turbine positions and avoiding routing cables through the densest boulder fields would reduce the need for such extensive planning.

As previously noted, the Councils are responsible for identification of EFH and HAPC and are partners with NOAA Fisheries in EFH consultation. It is challenging for Council staff to fully engage in this process when we desire to do so given a lack of access to data and information that is shared with NOAA Fisheries as they develop EFH CRs. We request access to data viewers that show information such as backscatter, bedforms, boulder fields, etc., as well as numbered turbine positions, so that we may be a more effective partner with NOAA Fisheries' Habitat and Ecosystems Services Division on EFH consultations for this and future projects.

Please contact us if you have any questions.

Sincerely,

Thomas A. Nies
Executive Director, New England Fishery Management Council

Dr. Christopher M. Moore
Executive Director, Mid-Atlantic Fishery Management Council

cc: J. Beaty, M. Luisi, W. Townsend, K. Baker

Tuesday – Thursday, June 27-29, 2023
Hilton Garden Inn, 5 Park Street, Freeport, ME 04032
tel: (207) 865-1433 | [Hilton Garden Inn Freeport](#)
[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, June 22, 2023 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 June 2023 meeting at the Hilton Garden Inn in Freeport, ME. 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 June 2023 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, June 27, 2023 at 12:00 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.*

Tuesday, June 27, 2023

9:00 a.m. Introductions and Announcements (Council Chair Eric Reid)

9:05 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

10:30 CCC Subcommittee on Area-Based Management (Council Chair Eric Reid)

Presentation on final report from the Council Coordination Committee's Subcommittee on Area-Based Management

11:00 Skate Committee Report (Scott Olszewski)

2024-2025 Specifications: progress report and potential initiation of framework to include measures to expand possession of smooth and barndoor skates; Thorny Skate: presentation on final white paper with potential approaches to support thorny skate rebuilding; Council discussion

12:00 p.m. 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)

12:15 Lunch Break

1:30 Atlantic Herring Committee Report (Cheri Patterson)

Inshore Midwater Trawl Closure: approve problem statement for action to revisit Amendment 8 exclusion zone; River Herring/Shad: consider change in priorities to identify time/area closure options to reduce bycatch in midwater trawl and small-mesh bottom trawl fisheries

3:15 National Standard 4, 8, and 9 Guidelines (Kelly Denit, NOAA Fisheries)

Presentation on comment opportunity under advance notice of proposed rulemaking (ANPR) for updating National Standard Guidelines 4, 8, and 9; SSC and staff input on guidelines; Council comments

- 4:30 National Standard 1 Technical Guidance for Reference Points and Status Determinations (Staff)**
Brief overview of NOAA's Technical Guidance for National Standard 1 Reference Points and Status Determinations; Council discussion on process for developing comments

Wednesday, June 28, 2023

- 9:00 a.m. GARFO/NEFSC Draft Strategic Plan (GARFO Regional Administrator Mike Pentony)**
Presentation on the Greater Atlantic Regional Fisheries Office and Northeast Fisheries Science Center draft strategic plan; request for Council review of draft
- 9:30 Groundfish Committee Report (Council Vice Chair Rick Bellavance; SSC Chair Dr. Lisa Kerr)**
Framework Adjustment 66: initiate action for specifications and management measures that may include: (1) 2024-2026 specifications for redfish, northern windowpane flounder, and southern windowpane flounder, (2) 2024-2025 specifications for white hake and U.S./Canada resources of Eastern Georges Bank cod, Eastern Georges Bank haddock, and Georges Bank yellowtail flounder, (3) a revised white hake rebuilding plan, and (4) Atlantic halibut management measures; Gulf of Maine Haddock: consider potential change in Council priorities to revise Gulf of Maine haddock specifications for 2024 and 2025 in Framework 66; Acceptable Biological Catch (ABC) Control Rules: initiate framework to revise ABC control rules for groundfish, receive Scientific and Statistical Committee feedback on control rules; Atlantic Cod Management Transition Plan: update
- 12:00 p.m. Monkfish Research Set-Aside Program Working Group (Libby Etrie)**
Progress report on Council priority to review and improve the Monkfish Research Set-Aside (RSA) Program
- 12:30 Lunch Break**
- 1:45 Monkfish/Dogfish Joint Action to Reduce Atlantic Sturgeon Bycatch (Libby Etrie)**
Approve range of alternatives for joint New England/Mid-Atlantic Council framework adjustment to reduce monkfish and dogfish large-mesh gillnet fishery interactions with Atlantic sturgeon
- 3:15 Electronic Monitoring and Reporting Grant Program (Gray Redding, NFWF Fisheries Conservation Program Manager)**
Presentation on the National Fish and Wildlife Foundation's (NFWF) competitive grant funding programs, including the Electronic Monitoring and Reporting Program and the New England Gear Innovation Fund, a new program that seeks to address right whale fishing gear entanglement issues
- 3:45 East Coast Climate Change Scenario Planning (Staff)**
Review findings from the February 2023 East Coast Climate Change Scenario Planning Summit; receive Northeast Region Coordinating Council (NRCC) feedback on summit findings; Council discussion on findings and next steps

Thursday, June 29, 2023

- 9:00 a.m. Ecosystem-Based Fishery Management (EBFM) Committee (John Pappalardo; Dr. Gavin Fay, UMass-Dartmouth SMAST; SSC Subpanel Chair Dr. Sam Truesdell)**
Prototype Management Strategy Evaluation (pMSE): final report on pMSE for EBFM and the Georges Bank example Fishery Ecosystem Plan (eFEP); SSC subpanel suggestions to improve results of pMSE's model scenarios; EBFM Deep-Dive Public Information Workshops: update
- 11:15 Scallop Committee Report (Melanie Griffin)**
Atlantic Sea Scallop Research Set-Aside (RSA) Program: approve longer-term RSA survey awards, survey guiding principles, and 2024-2025 RSA priorities; Specifications: initiate action for fishing year 2024 specifications, 2025 defaults, and other measures; **NOTE:** The Northern Edge will be discussed under the Habitat Committee report
- 12:30 p.m. Lunch Break**
- 1:30 Habitat Committee Report (Council Chair Eric Reid; BOEM)**

Northern Edge: progress report and timeline for action to potentially authorize scallop fishery access to the habitat management area at the top of Closed Area II on Georges Bank; Essential Fish Habitat Review: work plan update; Offshore Energy and Habitat-Related Work: Bureau of Ocean Energy Management (BOEM) update on Gulf of Maine offshore wind call area; other wind developments

3:00 Risk Policy Working Group (Megan Ware)

Update on Risk Policy Working Group's progress in addressing terms of reference

3:30 Atlantic Highly Migratory Species (HMS) (Karyl Brewster-Geisz, NOAA Fisheries; Council Vice Chair Rick Bellavance; Mike Pierdinock)

1. NOAA Fisheries HMS Management Division: presentation on (a) proposed rule for Amendment 15 to the 2006 Consolidated HMS Fishery Management Plan; (b) the advance notice of proposed rulemaking on electronic reporting; and (c) scoping for Amendment 16 shark issues; 2. HMS Advisory Panel: report on May meeting; 3. Advisory Committee to the U.S. Section to the International Commission on the Conservation of Atlantic Tunas (ICCAT): report on April meeting

4:30 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

World Golf Village Renaissance
500 Legacy Trail
St. Augustine, FL

June 12-16, 2023

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 (June 14, 2023, 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 [HERE](#). 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](#).

Written comments will be accepted from May 26 to June 16, 2023. 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 [HERE](#). Written comments submitted by mail/fax received by close of business the Monday before the meeting (June 5, 2023) will be compiled, posted to the website as part of the meeting materials, and included in the administrative record.

From June 6 to 5 PM on June 16, written comments must be submitted electronically through the online public comment form at the link above.

Monday, June 12, 2023

COUNCIL SESSION

COUNCIL SESSION I/Belcher 8:30 am – 12:00 noon (CLOSED Session)

- Approve minutes (March 2023)

 1. Litigation brief – NOAA General Counsel
 2. Appointments
 3. 2022 Law Enforcement Officer of the Year Selection

12:00 noon to 1:30 pm

Lunch

COUNCIL SESSION I/Belcher 1:30 pm – 4:00 pm (Open Session)

- Call to order and introductions
- Approve agenda
- Approve minutes (March 2023)

1. Reports (NOAA Office of Law Enforcement, US Coast Guard, Council liaisons, state agencies)
2. Update from Highly Migratory Species – NMFS HMS
3. Joint Commercial Electronic Logbook Amendment
 - a. Update on amendment
 - b. SEFSC commercial e-logbook project presentation – NMFS SEFSC
4. SAFMC Research and Monitoring Plan
 - a. Presentation on SEFSC on accomplishments and progress – NMFS SEFSC

Monday, June 12, 2023

COMMITTEE MEETINGS

Citizen Science Committee/Marhefka 4:00 pm – 5:00 pm

- Approve agenda
 - Approve minutes (June 2022)
1. CitSci Project Idea Portal
 2. CitSci projects and program evaluation update

Tuesday, June 13, 2023

COMMITTEE MEETINGS

Mackerel Cobia Committee/Roller 8:30 am – 11:00 am

- Approve agenda
 - Approve minutes (March 2023)
 - Spanish mackerel management
 - Scientific and Statistical Committee (SSC) recommendations – SSC Chair
1. Mackerel Cobia Advisory Panel (AP) report – AP Chair
 2. Port meetings
 3. King mackerel tournament landings
 4. Topics for AP meeting

Dolphin Wahoo Committee/Marhefka 11:00 am – 12:00 noon

- Approve agenda
 - Approve minutes (June 2022)
1. Dolphin Management Strategy Evaluation (MSE) update – NMFS SEFSC
 2. Dolphin-related management actions in the Caribbean – NMFS SERO
 3. Regulatory Amendment 3 (size limit and recreational retention limits)

12:00 noon to 1:30 pm

Lunch

Snapper Grouper Committee/McCawley 1:30 pm – 5:00 pm

- Approve agenda
- Approve minutes (March 2023)

- 1. Wreckfish (Amendment 48)
 - a. AP recommendations – AP Chair
- 2. SAFE Report

Wednesday, June 14, 2023

COMMITTEE MEETINGS

Snapper Grouper Committee/McCawley 8:30 am – 12:00 noon

- 3. Yellowtail Snapper (Amendment 44)
 - a. AP recommendations
 - b. Allocations Decision Tool
- 4. Scamp/Yellowmouth (Amendment 55)
 - a. AP recommendations
 - b. SSC Recommendations

12:00 noon to 1:30 pm

Lunch

Snapper Grouper Committee/McCawley 1:30 pm – 3:45 pm

- 5. Black Sea Bass Assessment
 - a. Presentation – NMFS SEFSC
 - b. SSC recommendations
- 6. SSC recommendations on topics not covered under agenda items
- 7. AP recommendations on topics not covered under agenda items

Wednesday, June 14, 2023

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](#).

Approve for scoping:

- 1) Scamp/Yellowmouth (SG Amendment 55)

Thursday, June 15, 2023

COMMITTEE MEETINGS

Snapper Grouper Committee/McCawley 8:30 am – 10:30 am

8. Private Recreational Permit (Amendment 46)
 - a. AP recommendations – Recreational Permitting and Reporting Technical AP Chair
9. Updates
 - a. Spawning SMZs Sunset
 - b. Best Fishing Practices Outreach

Thursday, June 15, 2023

COUNCIL SESSION

COUNCIL SESSION II/Belcher 10:30 am – 12:00 noon

1. Litigation Brief (if needed) – NOAA General Counsel
2. Staff Report
3. Council Coordinating Committee (CCC) Report
4. Presentation on National Standards – Mike Ruccio, NMFS OSF

12:00 noon to 1:30 pm

Lunch

COUNCIL SESSION II/Belcher 1:30 pm – 5:00 pm

5. Presentation on Space Operations off Florida – Dale Ketcham, Space Florida
6. Presentation on Equity and Environmental Justice – NMFS SERO
7. NMFS Southeast Regional Office Report
8. NMFS Southeast Fisheries Science Center Report

COUNCIL SESSION II/Belcher 8:30 am – 12:00 noon

9. Committee reports
10. Council workplan
11. Upcoming meetings

Other business

Adjourn